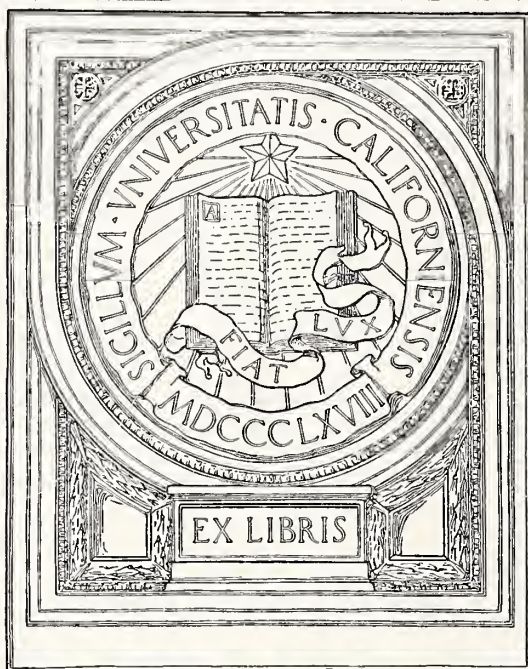
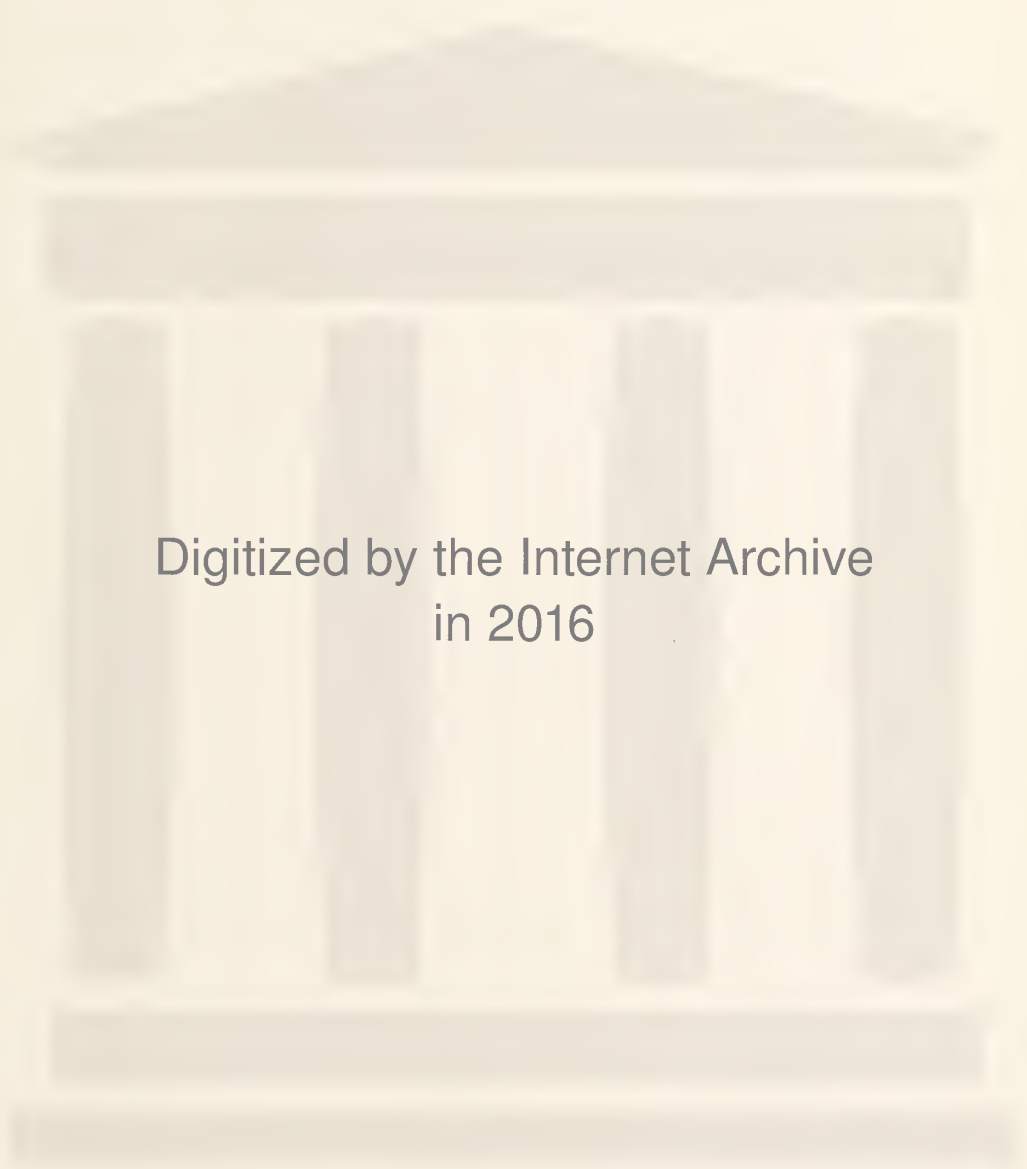


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HEAD INJURIES*

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and

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Faced with the accusing figures of 36,400 persons killed in a year; 107,000 hopelessly maimed; 1,170,000 seriously injured; an annual loss of \$1,600,000,000 in earning power and property, and the curve steadily rising as a result of trauma associated with automobile accidents alone, I offer no apology for choosing the subject of "Head Injuries" for your brief consideration.

According to Ramsdell "the wide distribution of motor traffic has, has of necessity, placed the responsibility for the management of these accident cases in the hands of the general surgeons of the country, inasmuch as 64 per cent of these patients are admitted to the smaller hospitals in the rural districts." Moreover the importance of head injuries is proved by the attention given the subject in the current medical literature. It is equally as important to note that there still exists much confusion in the management of these cases.

For the purposes of this article the term head injury is used so as to include all trauma. This includes the so-called cerebral trauma, concussion of the brain, contusion of the brain, lacerations of the scalp, and such complications as fractures of the skull, with extra or intra-dural hemorrhage, and an increase in intracranial pressure.

Even to this date the pathology underlying concussion and contusion of the brain is not

quite clear. After a blow on the head sufficiently severe to produce unconsciousness there is a primary anemia followed by edema, which may be slight or severe.

If the edema is severe with more than an absorbable amount of fluid, an increase in the intracranial tension occurs, due to the rigidity of the skull. This increase in intracranial tension may mean life or death. This is the essential feature to bear in mind in every case of severe head injuries.

As Ramsdell has so nicely stated, "The most difficult, while at the same time the most important part in connection with head injuries, is to estimate the extent of the pathology within the damaged cranium, for rational treatment can be based only on this information. Therefore, each case must be studied individually, for many times it is impossible to know what has taken place within the skull of the unconscious patient."

Skull fractures per se, are important only in so far as they affect the intracranial contents, either the brain, its membranes or blood vessels. Fractures are of immediate importance only when depressed on some vital part of the brain, compound, or with active hemorrhage. This point cannot be over-emphasized. Even the speedily made roentgen ray pictures are not justifiable when shock is present.

Much has been written on the subject of head injuries during the recent past, due to the rapid increase of these injuries and the lack of any accepted routine plan of treatment. Twenty years ago as Swift states, "each case was treated according to the plan of his medical attendant" and that usually consisted of an immediate rushing to the roentgen ray room and then to the operating room for a decompression, ignor-

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

ing altogether the physiology of the circulation of the spinal fluid and the shock present. No wonder a 40 per cent mortality existed.

Fifteen years ago the writer read a paper before the Louisiana State Medical Society on this subject and made a plea that more time and study be given these cases. Then again eleven years ago, when the State Society met in our city, another paper on this subject of head injuries was presented, in which a plea for repeated observation and conservatism was made. My views expressed then are on record. Since that time much experimental work on this subject has been done and close study made with published reports upon hundreds of cases by various investigators. In this way a clearer understanding is fast being arrived at.

Head injuries may be broadly classified into three classes: Those with injury to the contents of the cranium, those head injuries without damage to the contents and thirdly, those injuries involving scalp, cranium and intracranial contents. From the standpoint of treatment these injuries may be classified into those cases which will recover with no treatment, those that are so seriously injured that no treatment will be of any avail, and those in which the outcome will depend entirely upon the methods of treatment. As Reed states, it is almost impossible during the first 24 to 48 hours to determine to which group a certain patient belongs.

For a better understanding of the symptom complex resulting from serious head injuries one should be familiar with the circulation of the cerebrospinal fluid and above all, remember how sensitive to injury is the area of the floor of the fourth ventricle and the medulla oblongata. It is now well known that the floor of the fourth ventricle is the vasoconstrictor center and the medulla oblongata the seat of consciousness. The French and English have both contributed valuable findings on the symptom complex of head injuries and this material is illuminating to read.

The past twenty years have taught us much about the symptoms of head injuries. Today we not only recognize the immediate or acute symptoms, but are forced to acknowledge that in some cases the remote symptoms are many, such as mental fatigue and changes, nervousness,

visual complaints, body pains, gastric symptoms, plus the chain of symptoms characteristic of chronic subdural hematoma.

As a rule the acute symptoms are somewhat dependent upon the amount of trauma. Generally speaking, a patient with evidence of a head injury presents bruises, cuts or lacerations over the head, bleeding from the nose, mouth or ears, swelling about the eyes, a state of unconsciousness or a history of a period of unconsciousness. To this, in some cases, will be added compounded depressed fractures of the skull with active bleeding and profound shock; the most paramount symptoms being shock, plus hemorrhage, if hemorrhage be present. Next in order of importance is edema of the brain, which is soon followed by the all important increase of intracranial pressure. Very soon a patient may be in profound coma, with a fixed dilated pupil, a stertorous respiration, a varying pulse rate, or there may be wild delirium, with a moderately contracted pupil, depending upon whether the cortex or basilar region is most affected.

Some authorities lay special emphasis on the pulse and temperature. An extremely slow pulse of 40 beats signifies danger. A fast pulse of 120 to 130 signifies danger also. A pulse that has been beating steadily and then goes over 130 signifies that as a rule operative measures are not indicated. A sudden jump in pulse rate say from 50 or 60 to 140 in a short time, is a fatal symptom. The temperature in shock is usually low. A fever of 107 indicates hemorrhage in the brain substance. As a rule if the temperature, barring infection, does not go over 103 there is no alarm. A rapid rise to 105 or 107 is cause for alarm, as it indicates laceration of the brain substance or damage to the heat regulating center.

Many writers hold that the respiratory rate and character are the most sensitive indicators of brain damage and embarrassment. Temple Fay, who has contributed much on brain injuries, considers respirations a reliable and important index of the presence of increased intracranial pressure. If the respiratory rate is below 20 per minute, bearing in mind other vital signs, Fay thinks dehydration is in order. Many workers attach particular significance to

the appearance of Cheyne-Stokes breathing. On the other hand some workers attach no special importance to the respiratory rate and fail to find any striking characteristic change in the respirations.

After all the writings and teaching of Duret, von Burgmann, Leonard Hill, Cannon, Cushing and more especially Kocher and the acceptance of Kocher's teachings by most text books, we are still in a quandary about the symptoms of severe brain trauma and the behavior of systemic blood pressure, pulse and spinal fluid pressure. No doubt you recall the teachings of Kocher and how he divided brain compression into four stages. To Kocher's work has been added the clinical and experimental work of many others, especially McClure and Crawford, Cushing, Dandy, Eyster and more recently Trotter and Howe. Still more recently appears the illuminating studies of Browder and Meyer from the department of Neuro-Surgery of Kings County Hospital and Bellevue Hospital. The latter two authorities state—"Following these experiments, the majority of writers and teachers, have concurred in the following:

1. The essential clinical important effect of many intracranial lesions is the production of increased intracranial pressure;

2. Increasing intracranial pressure produces its general and vital effects through the medullary centers;

3. The symptoms of increasing intracranial pressure are: (a) Rise in blood pressure; (b) slowing of the pulse rate (not constant); (c) slowing of the respiratory rate, stertorous, deep breathing, becoming apnic and wave-like; (d) rise in temperature; (e) headache; (f) vomiting; (g) stupor, unconsciousness, coma; (h) papilloedema, and conversely the existence of certain of these symptoms is a reliable index of both the degree and presence of increased intracranial pressure;

4. Death from over-stimulation of medullary centers under the influence of steadily increasing intracranial tension. Thus it is that the blood pressure falls, the pulse races and respiratory failure ensues".

So then, after much work and investigation since Duret's time in 1870, when there appeared a fresh stimulus to investigative work on head

injuries, on down to the present time, I repeat, there is still much confusion and no one train of connected symptoms to be expected or looked for. Especially is this true in those injuries associated with brain laceration and subdural hemorrhage. In these cases the ventricles and spinal cord may soon be flooded with blood until the medullary centers, the heat regulating centers and entire area of the floor of the fourth ventricle are so encroached upon that such a rapid succession of symptoms takes place until it is impossible to correlate them. Others are of such a minimum degree that no alarming symptoms are present; they are neither minor nor severe, yet the outcome is problematic and the management both difficult and challenging to the medical attendant.

In reviewing the recent literature on the subject of management or treatment of head injuries one is impressed by the radical and fundamental differences of opinion expressed by authors of equal authority and experience. Were the treatment of these cases thoroughly standardized and established, the literature and present day writing on this subject would not be so voluminous. There is no one accepted method of treatment. After diligent study and tedious perusal of this vast literature one is left at the crossroads to select whichever method is most applicable to his particular case, hence the importance of a thorough knowledge of the disturbed physiology and the mechanics of head injuries.

At the present time conservatism is the one plan which seems to be accepted by a large majority of surgeons as paramount to all other plans. Next in order is complete rest and appropriate treatment for shock. The methods of treatment most in dispute today are dehydration by intravenous solutions, decompression by lumbar drainage, sedation with morphine and operations with especial reference to the indications for operations. Ramsdell says, from Baltimore comes a warning against lumbar puncture and dehydration and an endorsement of subtemporal decompression to relieve increasing intracranial pressure; from Philadelphia comes the strongest recommendation for dehydration; from Boston comes advice to begin dehydration early, reserving spinal puncture

and operation as successive steps to be used in combatting an increasing intracranial pressure; and from Chicago, after a careful resume of 2,445 cases, comes advice similar to that emanating from Boston, with perhaps less enthusiasm for spinal puncture and a strong warning against early operation, especially in the presence of shock. It seems that the only point one is able to find on which there is consistent agreement is that it is the increased intracranial pressure which is dangerous to the patient's life, and probably causes his death, and that this being so, it is the item which merits prognostic and therapeutic attention. It is the manner in which this one symptom is to be treated that so many differ. That each and all of these methods enumerated are advantageous in a particular case, I think cannot be questioned. It remains to select the particular plan of treatment for the particular type of case to be treated.

As many patients with acute head injuries, when first seen by the surgeon, are in surgical shock, it is imperative that the shock be treated before the institution of any other therapy. Many say morphine, however, should not be used unless the patient is delirious or uncontrollable because of its depressing effect on respiration and masking symptoms. Hypertonic solutions of glucose should be used in only the severe cases as it causes a secondary increase in intracranial pressure. Hypertonic saline should not be used on account of the salt clinging to the brain cells and attracting fluid. Fay uses strychnine or pituitrin instead of caffeine and adrenalin. As soon as the patient's condition permits, external wounds should be cared for; hemorrhage, if any, has been controlled while directing the care for shock. A neurologic examination should follow, especial care paid to the cranial nerves, pupillary reflexes, discharge from nose or ears and evidences of paralysis in any extremity.

There need be no special hurry for a roentgen ray examination, however this should be carried out without unnecessary delay to determine the presence of a depressed fracture probably causing a torn meningeal vessel. However in

the presence of a depressed fracture there should be no hurried operative procedures in the absence of active bleeding or pressure symptoms on some vital area of the brain. A diagnostic spinal puncture may be done in certain cases to determine the presence of blood and, if present, then done therapeutically once daily to relieve the bloody fluid. Much blood is not readily absorbed from the ventricles. Blood pressure readings should be made at regular intervals and an accurate record started of pulse, temperature and respiration. Above all maintain quiet and rest, with sedative drugs if necessary.

If, after a painstaking examination and observation, with recorded findings, one finds a gradual or a rapid increase in intracranial pressure, an increase in blood pressure with irregular respiration, a decision as to some plan of procedure must be decided upon. One of the plans of treatment mentioned may meet all requirements of such a case or it may require a combination of the methods.

Conservatism and non-operative treatment for most cases of injury is suggested as the better plan at the present time. At the same time one must bear in mind that there are some cases which best respond to operative methods or a sub-temporal decompression.

In the more severe types of injury with ventricular hemorrhage it would appear that spinal drainage would be indicated, notwithstanding that Dandy and other good surgeons say it is a dangerous plan. Personally I believe the idea of herniation of the brain stem and sudden death is exaggerated. However, extreme caution should be used and the drainage slowly done.

It goes without comment that there are some cases of head injuries, those with definite symptoms of localization or limb paralysis, where operative treatment must be carried out as early as possible. Also, compound fractures, with or without comminution should have attention as soon as shock is successfully treated. A depressed fracture without focal symptoms does not require immediate operation.

Rest should be enforced in all simple, moderate or severe head injuries, for a length of time proportionate to the severity of the injury.

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DISCUSSION

Dr. Alton Ochsner (New Orleans): In 1931, we studied 1500 cases admitted to the Charity Hospital, New Orleans, in the period 1910-1930. It was interesting at that time to see that the mortality rate was exceptionally low in the Charity Hospital series, and the reason was quite obvious in these cases in contrast to the other series throughout the United States in which there was a wave of enthusiasm about operative treatment. There has never been this wave of enthusiasm at Charity Hospital; the incidence of operations has never been higher than 5 per cent; about 1910-1915 it did approach 5 per cent. The general operative incidence has been 1 per cent in major head injuries admitted to Charity Hospital. The other patients were treated conservatively and the mortality rate has been practically very low (about 8 per cent) in these twenty years. This is probably why the mortality rate in the Charity Hospital series is much lower for this period of time than that seen in other series.

We have used ultra-conservatism in this series unless there was a definite indication for operation, such as compound fracture, in which debridement should be done. In those in which there is marked decompression, surgery should be done.

We have used dehydration, using it of course only after patients have recovered from shock for it is important not to use dehydration when the patient is in shock. We have abandoned the use of hypertonic saline because of the subsequent rise in pressure, and we now do not use glucose. We now use 25 per cent sucrose intravenously in amounts from 25 c.c. to 100 c.c., depending on the condition of the case.

We use repeated spinal tap as a diagnostic and prognostic procedure. We feel that we can follow these cases and can gauge their progress better with that observation than we can otherwise.

The conclusion that can be drawn from the Charity Hospital survey is that by resorting to conservative measures and operating only when there is a definite indication, the mortality rate

in general, in the hands of the average surgeon, will be much lower than if one resorts to operative procedures more often.

Dr. Ernest Sachs (St. Louis): Dr. Gray's paper is an admirable resumé of the situation as it exists today. One of the things that he emphasized, which could not be emphasized too strongly and with which I heartily agree, is that there is much confusion how to deal with head injuries. The particular reason for this confusion is that men do not realize fully which of the conditions in a head injury can be treated and which cannot. In any head injury of any extent, there is always contusion and laceration of the brain. There is nothing that one can do up to the present time for contusion and laceration of the brain. The only conditions for which anything may be done are either frank hemorrhage, early or late, and cerebral edema. I am delighted that Dr. Gray laid such stress on the factor of cerebral edema, because I believe with him that cerebral edema is one of the most important factors in causing the death of the majority of cases of head injury.

It, therefore, resolves itself into the best way of combating cerebral edema. One statement which appeared in the literature some years ago and came from the Baltimore Clinic, which I think has done untold harm, was that the use of dehydrating substances was of no value because of the development of secondary edema. Still anybody who has treated head injuries is perfectly well aware that nobody thinks of giving one injection of whatever substance they want to use to overcome cerebral edema and then leaving it at that. You have to continue with the injections intravenously or give it per rectum, either will do, in order to overcome cerebral edema. We have used magnesium sulphate per rectum every four hours as it takes four hours for secondary edema to recur. We have used glucose intravenously, and we have in the last year or two been using 50 per cent sucrose. I am not quite sold on the sucrose idea as yet, because we have a few observations—not enough to record as yet—in which there was a rise of blood pressure following the injection of sucrose, and not a fall as was claimed from Cannon's Laboratory, where I think sucrose was first tried on animals.

I feel strongly on the subject of the use of morphine in head injuries. It is the drug that is most frequently used and is, in my opinion, a very dangerous drug. In my clinic we never give morphine. On account of the depressing effect on the medulla, and the respiratory symptoms in head injuries, one always has to be very careful about using it.

Regarding the use of spinal puncture, I regret I must disagree with Dr. Ochsner for two reasons. First of all, the spinal pressure reading, clinically we have demonstrated over and over again, is no

indication of the amount of increased intracranial pressure that is present. Only last week, I saw a patient on whom we were not certain of the diagnosis and did a spinal puncture and reading, and that patient had a pressure of 15 mm. of water and had a brain tumor with as marked intracranial pressure as I have ever seen. It is possible in such cases that the spinal pressure may be low and that the intracranial pressure may be high because there is a block in the posterior fossa, so that the reading of the spinal pressure is greatly misleading.

The second objection is that I have seen repeatedly a number of deaths following spinal puncture and I have seen any number of cases in which symptoms have been markedly aggravated following spinal puncture frequently after several hours.

And third, my objection to spinal puncture is that I feel convinced that withdrawal of bloody spinal fluid has no therapeutic value. It was claimed by Dr. Bagley of Baltimore several years ago that blood in the spinal fluid is harmful. If that is so it would be so in practically every case in which a brain tumor has been removed. It is an extremely common observation that there is blood in the spinal fluid following the removal of a brain tumor and it never does harm.

Of course, there are a great many other questions that one would like to speak of, but I am afraid I have used up too much time. I do think this is a very important subject, and in conclusion, I would say the most important phase of the treatment is first of all, as Dr. Gray said, conservatism, and in the second place, treating the cerebral edema.

A PRACTICAL TUBERCULOSIS CASE-FINDING PROGRAM*

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Knowledge is a wonderful thing, but the proper use and application of knowledge is even more wonderful. It has been said, and truthfully so, that without the addition of a single new fact regarding tuberculosis, this disease, which today is one of our major health problems, could be brought under control in a few decades! A strong statement,—yes, but one that challenges every health department to do more in controlling tuberculosis. Adequate hospitalization for the tuberculous will require

quite a financial outlay, but tuberculosis case-finding is now within easy reach.

Tuberculosis still kills over 1500 persons annually, in Louisiana, and makes invalids of thousands of others. The loss of life, the disruption of homes, and the great economic loss from tuberculosis is bad enough, but, when we realize that a new crop of tuberculosis problems is bound to result from improper control measures, we see the establishment of a vicious cycle. It is not pleasant to think of one's relatives or close friends having unrecognized tuberculosis and unwittingly spreading their disease to others, or to think of tuberculous maids and cooks working in our homes in intimate association with our children. This situation does exist and it is imperative that we correct it. Such statements are not made to frighten, but are intended to arouse a somewhat jaded interest in the whole problem of tuberculosis.

To think of tuberculosis as a shameful disease, prevalent only in the lower economic groups, is a misconception. We must look for it everywhere. For example, a study of the medical students at the University of Pennsylvania, in 1929 and 1930, showed varying degrees of demonstrable tuberculosis in over ten per cent of the group. Of course, these are not typical findings for the population in general. Fortunately, in rural states, where opportunity for exposure is less, we can expect a relatively low tuberculosis incidence.

For years, voluntary and official health agencies have conducted tuberculosis educational campaigns, stressing the importance of early diagnosis of tuberculosis. With the exception of a few hospital clinics and still fewer voluntary clinic groups, very little of this work has been done. In rural areas, particularly, roentgen ray diagnosis of tuberculosis has been available to only the select few. Physicians have been most cooperative in trying to promote case-finding; but, without some arrangement for state assistance, programs have died an untimely death. The ground work has been laid in Louisiana for a state-wide case-finding program, to serve, primarily, as a consultation service to the physicians. This approach immediately enlists the assistance of some 2115 physicians in the plan.

*Read before the Louisiana State Medical Society, Monroe, April 26, 1937.

Tennessee, North Carolina, Virginia, Alabama, Georgia, Arizona, and Mississippi have had travelling clinics in operation for several years. More recently Texas, Missouri, Iowa, Illinois, Pennsylvania, Florida, South Carolina and other states have started or will start similar programs. Thus we see that the idea is neither new nor untried. It is well, however, to analyze the various features of a chest clinic, to justify its use in any given state. Practical and economical clinic operation is necessarily the goal.

For successful operation, any state chest clinic service must meet with approval by the medical profession. Clinic policies and the manner of operation will determine the extent of the cooperation given the work, by physicians and the public. The local health units will be called upon to provide the work-up of clinics and a follow-up service. All associated agencies in the area should be familiar with the aims and policies of the clinic.

The story is told that the trustees of the University of Pennsylvania were anxious to check on Sir Wm. Osler's social manners before offering him the professorship of Medicine at the University. It seems they were satisfied with his medical qualifications, as they might well have been, since Sir Wm. Osler was one of the outstanding physicians of modern times. A dinner was arranged and cherry pie was served as dessert. Sir Osler's correct choice of silver for the pie was to determine his being selected as professor of medicine. Evidently, Sir Osler chose correctly.

I cannot vouch for this story, but I can draw an analogy and assure you that the choice of proper equipment and the adoption of proper clinic policies will properly launch any clinic service.

Until recent years suitable portable roentgen ray equipment has been the stumbling block to a travelling clinic, but now highly satisfactory equipment has been developed for this work. It matters not whether a standard automobile, a truck, or a trailer is used to transport the equipment, so long as the equipment itself meets the rigid standards set for good diagnostic chest films.

Various arrangements have been made for

the taking of chest clinic histories, but, in my estimation, having histories taken in triplicate, on a typewriter, by a nurse well trained in tuberculosis work, is the ideal arrangement. This provides the profession with standardized, legible records that popularize the service.

The forms needed by the clinic are best printed on one side only, to allow of easy copying in triplicate. This gives a copy for the Central Office, a copy for the local health unit office, and a copy for the physician referring the patient to the chest clinic.

Indiscriminate studying of everyone who comes to the clinic out of curiosity is obviously impossible. Selecting of those eligible for study should be made well in advance of the clinic's visit. The securing of clinic material is, logically, the duty of the local physicians with the local health unit personnel assisting. In the beginning, every effort should be made to direct attention to the group that will provide us with the greatest number of open cases of tuberculosis. Those with suspicious chest symptoms and those with positive tuberculin reactions who have been in contact with known tuberculosis will make up the best group for study.

It is fairly easy to tuberculin-test large groups in schools or mills, but, with limited funds, taking the clinic's time and films to check these groups is unwise. This statement may be criticized by some of you who feel that the educational value of school tuberculin-testing offsets its rather questionable case-finding value, but even in New York State, where adult case-finding has been in progress for years, the health authorities feel that tax monies are best spent on selected groups of individuals rather than school groups. Children always present an appeal, but such tuberculin programs should be relegated to secondary consideration. When voluntary agencies or foundations are paying for school studies, there is some justification for this work being done as an educational program.

In arranging groups for clinic study, negroes should be given more than passing consideration. Tuberculosis mortality and morbidity rates are much higher for negroes than whites. We should allocate clinic service on a needs

basis rather than on a population basis. For example, a negro population of only one-third of the total in a given parish might well be accounting for two-thirds of all tuberculosis deaths in that parish. In the South, the use of negroes for domestic help makes it doubly important that they be studied to protect our white households.

It is not desirable to utilize the state clinic for the repeated examination of known tuberculosis cases. This practice would utilize the clinic case-finding time for work that should be done by local physicians. However, to be properly classified as to the extent of disease, those patients who have been diagnosed tuberculous by physical and sputum examinations should be admitted once to the clinic for a roentgen ray. Proper classification of tuberculosis is very desirable now that the institution of surgical collapse proceedings in the treatment of tuberculosis requires knowledge of the type and extent of the lesion. At this point, let me say that the mere finding of tuberculosis without instituting some isolation and treatment measures has accomplished very little.

Now, to outline a plan of state chest clinic procedure:

Before field work is begun, the state clinician meets with the health officer and the doctors in a given parish. The clinic policy and plan is presented and discussed by the group. A clinic date is set, several weeks in advance, by the Central Office. This allows time for the local Health Unit personnel to contact the patients for the doctors and to list them for the clinic. Approximately thirty patients are scheduled for any one day. The preliminary clinic visit for the taking of histories and the making of chest roentgen rays is conducted by a special trained nurse historian and a nurse roentgen ray technician. The films and histories are sent to the Central Office, are developed and read. One copy of the history and roentgen ray report is kept in the Central Office, one copy goes to the referring physician, and one copy is filed in the local office. Immediate delivery of the physician's copies of the roentgen ray reports is desirable.

Those with positive roentgen ray findings are invited to return for a physical chest examina-

tion on a set day, and the physicians are urged to come in at that time. The state clinician makes the physical examinations and records his findings. The patient is instructed to see his physician, later, for the completed clinic report. This consultation aspect of the clinic is adhered to rigidly. The clinician, on his visit to a parish, discusses various phases of tuberculosis with the physicians, individually or in groups.

Home visiting services of the local health nurse are offered to the physicians for their tuberculosis patients. Upon request, the roentgen ray films of the state clinic will be loaned to physicians for comparison with future films. Suggestions for laboratory work may be made to the physician, to determine activity in his patients, but no treatment recommendations will be written on the reports.

It is to be stressed that the state clinic is not to replace individual effort by the physicians in finding of pulmonary tuberculosis. This service is to strengthen the work done by the physicians and to encourage their making diagnoses of tuberculosis, if possible, by repeated physical and sputum examinations in advance of the clinic visit.

Eventually, it is hoped that our field case-finding program in Louisiana can be more closely coordinated with tuberculosis sanatorium work over the state. Bringing tuberculosis into the open will give everyone a chance to strike it down!

MODERN TRENDS IN PUBLIC HEALTH WORK IN LOUISIANA*

W. K. SHARP, JR., M. D.†
NEW ORLEANS

About a half century ago Congress enacted laws charging the Public Health Service with the duty of preventing the interstate spread of disease. The accepted method of prevention and control of disease was almost entirely limited to quarantine. In 1855, forty-three years after Louisiana became a state, there was created a joint City and State Board of Health with powers extending over the state.

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This was one of the first established state boards of health in the United States, and it was the direct result of a yellow fever epidemic in 1853 and 1854. The primary function of this board of health was the protection of the city and state from yellow fever. Few other activities were even attempted. In 1898 the state legislature of Louisiana created a state department of health, separate and apart from the City Board of Health. The creation of this board of health was to give power to promulgate and adopt a sanitary code.

The spread of communicable diseases from one state to another can best be prevented by eliminating local conditions under which such diseases arise. The responsibility, therefore, in control and prevention of the spread of disease was then and is now shared jointly by local, state and federal governments. More or less limited appropriations have been made by Congress for this purpose each year since 1917. However, in 1914, Congress made a very small appropriation to begin the study of rural living conditions. These studies were for the purpose of: (a) ascertaining what were the sanitary conditions of the rural districts of the United States with particular reference to that bearing on the interstate spread of communicable diseases; (b) determining improved methods for the correction of insanitary conditions; and (c) determining to what extent, in the average rural communities of the United States, persons with responsibility of citizenship would carry out indicated measures which were really in their means, to correct insanitary conditions which had been well pointed out to them as a serious menace to the health and lives of themselves and their families. The Public Health Service and the Rockefeller Foundation in cooperation with official health organizations of a number of states, during recent years, have striven earnestly to ascertain how best to safeguard the health of the distinctly rural population. These together with other agencies, nearly a quarter of a century ago, came to the conclusion that full time local organizations, manned by well-trained personnel on a permanent basis could properly correlate and integrate the various phases of a sensible public health program. Society has

developed into a more and more complex organism. A great many functions which formerly were left to private initiative and the common sense of the individual have become the work of the administration. The citizens of a modern community had to assume a great many duties which had been unknown to them before. If we wanted to build a home formerly, we could do it as it pleased us best. Today, we are not free in this respect. We have to adapt ourselves to an altogether new idea. Usually we are told what to do according to regulations. We send our children to school whether we like it or not. We accept these regulations because we recognize the fact that they benefit, not only the community, but ourselves as well.

We now find ourselves in America not only in a new era, but in an entirely "new deal" age. This era is most certainly distinguishable from the past in at least one respect: It is an era of social action in accordance with conscious social planning. We have discovered that our conditions and destinies can be more and more definitely controlled. Whether they are wisely controlled depends upon the nature of our ideals and upon the measures we take to perfect them. Surely there is no sounder ideal than that more than once expressed by our President when he stated that "The State's paramount concern should be the health of its people." There is no field of social effort in which greater success has been demonstrated than in certain aspects of curative and preventive medicine. I might also add that there is no direction in which there is greater promise of success than in public health and medical care.

Until recent years the public health service of many states had lagged behind in the development of service with the larger municipalities, and in this connection we must remember that municipal health organizations historically antedate state health organizations. One of the most outstanding and impressive developments of the last decade is the very definite trend to greater emphasis on the importance of high-grade technically trained public health workers. There is a universal demand for epidemiologists, laboratory workers, sanitary engineers, properly qualified public health

nurses, medical officers and others. There is nothing untried or unproved in the method of federal cooperation with states and local health agencies. For the past twenty years, the Public Health Service has been actively engaged in cooperation with the states in the organization and maintenance of state and local health services. This cooperation has been conducted through technical assistants, financially aided to a limited degree, and the assignment of Service officers on request from states to duty within the states, and it is only through such actual experience and thorough preparation that we are led to such sound conclusions concerning public health administration in this country.

Louisiana established its first full time parish health unit in 1921, in Washington Parish. This was a new activity for Louisiana, but the method had been tried and accepted as a success in certain southern states. On January 1, 1927, there were only ten parishes in Louisiana with full time local health service with forty-five public health workers, whereas on December 31, 1927, following the Mississippi flood, there were eighty-five public health workers serving twenty-two parishes on full time basis, and prior to the availability of funds from the Social Security Act, on January 1, 1935 there were 142 public workers serving 34 parishes, and at present there are approximately 281 public health workers serving 38 parishes, or over 60 per cent of the total rural population of Louisiana, and it is very remarkable that not a single parish that has adopted this type of service since 1928 has discontinued it.

Under the provisions of Title VI of the Social Security Act, payment from allocations was made to the Louisiana State Health authority on February 1, 1936, for the purpose of assisting the State Health Department in strengthening certain bureaus or divisions and to provide additional facilities for promotion and administrative guidance of state, local (district, parish and city) health departments; also for the purpose of training health personnel. This payment was made to the State Health authority after being approved by the Surgeon General of the U. S. Public Health Service. It has been the policy of the Public Health Service

to give its approval to any plan that is scientifically sound and which gives promise of an adequate return on the investment. The Service has particularly refrained from recommending a standard pattern of organization and administrative practice. On the other hand it has encouraged the adoption of plans adapted to the particular needs of each state and has encouraged experimentation in its different methods of administrative practice, and, above all, the Service has stressed that the work is to be performed within the states and not to be performed directly by the Public Health Service, but that it is to be carried out by and administered under the supervision of local and state health authorities, under the authority of state and local laws and regulations, in the same manner as the regular activities of such authorities have been performed heretofore. All funds paid to the states become state funds, just as if they had been appropriated by the state legislature, provided they are used for no purpose other than that for which they were designated by Congress. All persons employed on the work within the states and local communities are state and local employees, selected, appointed and paid by the state or local authorities. Since the availability of funds from the federal government under Title VI of the Social Security Act, the state health department staffs have been strengthened; medical officers, nurses, sanitarians and others are now receiving postgraduate courses in public health administration, industrial hygiene and tuberculosis control; travel grants have been provided for other technical workers; some very essential fundamental services have been materially augmented. The federal government has at least made a beginning in assisting the states and local areas in the development of a public health program.

The most important single factor in the success of a public health program is the fitness of those to whom the administration of the program is entrusted. Therefore, the opportunity offered for the training of public health personnel under the provisions of the Social Security Act was one of the first and most important parts of the program to be accepted by the Louisiana State Board of Health.

There has been a great deal of undesirable and unnecessary unrest among the personnel of health departments. In many organizations, whether state or local, there have been disturbing changes of personnel. In some instances, due to political expediency, competent workers have been unceremoniously dismissed while incompetent individuals have been retained. Only too often the funds for the maintenance of efficient health services have been curtailed or withdrawn as the first rather than the final step in an economy program. Needless to say, such interference with plans and personnel has created an impression that public health work is a semi-permanent activity of dubious value that may be turned off and on like a controlled stream of water. The time is now at hand for removing permanently the hindrance to an enlightened and progressive public health viewpoint. In no way can this be better done than by assuring adequate salaries, undisturbed tenure of office for competent persons, and sufficient training to insure efficient service. The belief may be expressed that when the public health workers become proficient in their professions through proper academic and practical training that commensurate salaries and prolonged tenure of office will follow as a matter of course. A health department should be an integral part of the local government, on an equal footing with school, justice, and police administrations. The opportunity offered for the training of public health personnel under the provisions of the Social Security Act will undoubtedly aid in attaining the objectives just mentioned.

Public health work should be a profession, as clearly defined as that of law, medicine, engineering, pedagogy, or other specialties. Moreover, a public health career should be as attractive, lucrative, and permanent as any other professional field. While the opportunities for financial advancement may not be as promising as elsewhere, there is always the prospect of affording service to humanity, through the prevention of unnecessary illness and premature death.

Recognizing that the training of public health personnel is a pivot around which the health provisions of the Social Security Act

revolve, the Conference of State and Territorial Health Officers, which met with the Public Health Service in June, 1935, devoted a goodly share of its attention to this phase of the subject.

The Conference recommended that \$1,200,000, or 15 per cent of the proposed \$8,000,000 annual appropriation, be set aside for the prompt development of qualified personnel designed to strengthen and enlarge the staffs of state and local health departments. In furthering these objectives it was recommended that the Public Health Service proceed to develop suitable training centers at existing institutions, conveniently located to serve certain groups of states, and that the cost of aiding these institutions, where necessary, be prorated among the states to be served by the proposed centers. Furthermore, it was suggested that funds be granted to the several state departments of health in accordance with their needs, as certified by the state health officers, for the purpose of paying living stipends, tuition, and traveling expenses of trainees who would be selected by the state health officers for attendance upon courses to be given at the training centers.

It is desired to emphasize that selections of public health trainees are to be made by state departments of health and not by the Public Health Service. Moreover, it is expected that positions will be provided in state and local health departments for those who have satisfactorily completed the course of training. Therefore, it is essential that the nominations of trainees be correlated with the plans and financial resources of each of the state departments of health.

The Louisiana State Board of Health and its staff of public health workers long ago realized the fundamental importance of close cooperation with the medical profession. Therefore, a plan to conduct lecture courses in the councilor districts of the State Medical Society was submitted to a joint committee on maternal welfare and medical education for their review, and on August 11, 1936, the following plan was adopted:

(a). The Course on Obstetrics be conducted beginning the early part of October and to be

carried on through November and December.

(b). The Professors of Obstetrics of Tulane University and the Louisiana State Medical Center be requested to prepare an outline of lectures to be followed by the lecturers.

(c). The Director of the Division of Maternal and Child Health would select the towns wherein the courses would be conducted and contact the District Councilor relative to district committees.

(d). Editorials be published in the State Medical Journal.

(e). The President of the State Medical Society be requested to write the District Councilor explaining the plan and urging cooperation.

(f). Pamphlets, folders and letters be prepared and mailed to all physicians in the state.

(g). Negro physicians be invited to attend the courses.

(h). The lecturers be available for consultation during their stay in town.

(i). The lecturers to receive an honorarium of \$25.00 per lecture day and traveling expenses. At this meeting a group of outstanding obstetricians were selected to be invited to conduct the courses.

During the months of August and September the organization and preparation was carried on in the districts. Committees were appointed, schedules arranged, and lecturers assigned. Several moving picture films were purchased and some borrowed. It is estimated that three hundred physicians attended the lectures.

Since such pleasant relations have been assured from your State Medical Society in the development of a maternal and child health program, let us not for a moment overlook the value of the family physician in the whole scheme of things. First of all, no public health program will succeed without the active participation of the family physician. With all of our success in the campaigns for early diagnosis to uncover early tuberculosis, syphilis, cancer and other diseases, remember that the family physician on the active firing line is and will continue to be one of the most important links in the entire chain between the public and the health officer. Tuberculosis control serv-

ice is essentially diagnostic and consultant to the medical profession, the object being to detect cases of tuberculosis in the early curable stage, to the mutual advantage of the physician and patient. Already plans are well under way in Louisiana for the development of case finding clinics under the very closest cooperation of the local physicians.

Syphilis, not unlike tuberculosis and diphtheria, is a communicable disease and should be treated as such. This disease has been brought out in the open and never before in the history of organized medicine has there been such a unanimous response on the part of the medical profession to take an active part in any public health program as is now being shown in syphilis control. At the last conference of Presidents and Secretaries of State Medical Societies, the conference unanimously endorsed the request of the Surgeon General of the Public Health Service for the appointment of a committee of each State Medical Society which would study the problem of the state and recommend to the state health officer and to the Surgeon General of the Public Health Service a practical, common sense, state-wide plan for the control of syphilis. Many of the states have already appointed a committee and thirteen submitted at least a preliminary plan. The American Medical Association has taken an active part. At a cost of from twenty to thirty thousand dollars it has joined with the Public Health Service in an effort to teach the physicians of the country the essential facts of syphilis diagnosis and treatment through a talking-motion picture to be shown to every county medical society. The public and the profession are now united in demanding action. A few states have planned excellent programs, but none as yet have put them into full execution. The minimum measures should include the appointment of a full time venereal disease control officer under the supervision and direction of the state health officer, this physician to be trained in the clinical as well as the public health aspects of the problem; the free distribution of anti-syphilitic drugs; the standardization and improvement of the laboratory diagnostic service, the development of an epidemiologic service and a great improvement

in treatment facilities; more efficient case reporting and, above all, the early recognition and treatment of all cases of syphilis.

Most certainly plans will have to be developed for either cooperative clinics, or part time clinicians or some method involving a fee system for physicians who devote their time to the treatment of this disease. Whatever system is developed, it will have to be done under the supervision of the official health agency in the very closest cooperation with the parish medical society. In the development of any communicable disease control program, whether it be the administration of toxoid or antitoxin for the prevention of diphtheria, typhoid inoculation, smallpox vaccination or the treatment of syphilis, it is essential, first of all, to develop a sound, well organized public health program with full time, carefully selected, well trained personnel in charge of the program, so as to provide continuous and full time local health service.

Specific plans should also be made to organize as rapidly as possible full time local health service in every parish within the State of Louisiana and, above all, the very closest cooperation should be maintained between the active practicing physicians, the public and the official health authorities.

I also want to take this opportunity to congratulate the profession, the official health agencies and the public in general for the remarkable, well-planned, sound program that has been so carefully developed in the State of Louisiana.

DISCUSSION

Dr. R. W. Todd (New Orleans): The realization of the joint responsibility for the prevention of the spread of disease by local, state and federal authorities is evident when all are willing to cooperate by the spending of both time and money. This millennium seems to have come or at least to be on its way. As a people we have come to accept regulation as a matter of course. Now if these trends are used to effect a well-rounded health program, a program consistent with the recognized facts of science and with conscious social planning, something will have been done for Louisiana of which the medical profession may be justly proud. Scientifically sound and socially adequate plans should yield huge returns.

Social Security is a new trend. In Louisiana, it has already augmented the existing health or-

ganizations with funds that have brought an increase of trained personnel and an increase of activities. A sense of permanence, the recognition of the professional status of the health worker, added to adequate financial return, will surely bring about increased efficiency in health work. To a person who knows that his position is secure from unjust dismissal, specialized training for increased efficiency is not a luxury and a hazard but a necessity.

The present maternity and child hygiene program is an example of increased activity due to increased funds. Aid to crippled children, tuberculosis control, venereal disease control are efforts sure to follow. The full cooperation and unflinching aid of the medical profession has helped the health worker in the past, and it is the intention of these same health workers to be deserving of the continued good will and aid of the medical profession.

LYMPHOGRANULOMA INGUINALE*

(LYMPHOPATHIA VENEREA)

J. W. TEDDER, M. D.†

NEW ORLEANS

Lymphogranuloma inguinale is a chronic low grade inflammation of the lymphatic nodes, of venereal origin, resulting in complications of fistulae, esthiomene, or anorectal syndrome in an estimated 50 per cent of infected persons. This clinical picture has been described under a variety of titles since the middle of the 19th century. How long previous to this time the disease has existed cannot be definitely stated. Coutts¹ interestingly traces reports of a similar condition which was known to the Greeks and Romans as "pannus" or "inguen" and to the Arabs as "al-thun". Incan pottery depicts lesions very much like our present day genito-anorectal syndrome. According to some authors, the disease was common among Negro women in Africa long before the discovery of America.

Durand, Nicolas and Favre, in 1913² and again in 1922³, recognized and pointed out the specificity of this disease, and its probable ve-

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neral origin and described it as "subacute inguinal lymphogranulomatosis". Previous to this time and subsequently, this entity has been described under a variety of titles, including climatic bubo, tropical bubo, non-venereal bubo, subacute inguinal poroadenitis, the fourth venereal disease⁴, strumous bubo of the groin, non-tuberculous granulomatous lymphadenitis, sub-acute lymphadenitis, *maladie de Nicolas-Favre*, hypertrophic bubo, and lymphopathia venereum. This last name, lymphopathia venereum, was suggested by Wolf and Sulzberger in 1932,⁵ and much can be said in its favor. The older and better known name has a confusing resemblance to that of other diseases and does not embrace the various extra-inguinal localizations now recognized as being of identical etiology⁶.

The relationship of lymphogranuloma inguinale to granuloma inguinale, syphilis, tuberculosis, Hodgkin's disease, chancroidal bubo, tularemia, pyogenic infections, and in certain parts of the world bubonic plague, has been clearly defined. Previously, many cases of this disease have, no doubt, been classified and treated as tuberculosis or syphilis. It is well to differentiate further lymphogranuloma inguinale from granuloma inguinale. Their greatest similarity is in name. The latter disease must be remembered as one of the skin and subcutaneous tissues and the Donovan bodies are found in scrapings from the lesion. Their only relationship is that both are disseminated by venereal contacts.

The term, lymphogranulomatosis, (Hodgkin's disease) is also confused with lymphogranuloma inguinale where their similarity is limited to their names.

The filterable virus thought to be responsible for lymphogranuloma inguinale has been the subject of much study. It has been successfully transmitted to apes, mice, rabbits and other laboratory animals. In the ape, the virus appears to have a special affinity for the central nervous system tissue where it causes an encephalitis. After passage through apes, it has been used to reinoculate human paralytic patients. The fact that the nerve tissue in apes is involved proves that the virus does not limit its actions to the lymphatic tissue. The

virus loses its virulence very rapidly in glycerine, but retains it for 22 days in the frozen state.

Von Haam and D'Aunoy⁷ have demonstrated the virus of lymphogranuloma inguinale in the spinal fluid of human cases. They believe that the disease is a systemic one and suggest that the fever and headache support this idea.

That the disease is predominately one of venereal origin cannot be doubted. Nicolas reported the case of three soldiers exposed to the same source, all of whom developed lymphogranuloma inguinale. One of the soldiers was married, and subsequently infected his wife. Cases are known in which the female acts as a host for the virus and can infect exposed partners without developing either clinical signs of the disease or a positive Frei test.

Hellerstrom⁸ reports the case of a young surgeon who in 1904 acquired an infected finger, through a traumatic wound, while operating upon a patient with inguinal adenitis of unknown origin. The axillary nodes later became enlarged and fluctuating. Extirpation was necessary. Years later, in 1927, Hellerstrom did a Frei test on this individual and found it to be strongly positive.

The earliest cases of lymphogranuloma inguinale reported were in two children⁹. The first was a girl of 8 years who developed rectal manifestations. The second was a Negro girl of 10 years who reported to the hospital with an adenitis. While under observation, the Frei test became positive. The child's mother and a boarder in the home have positive Frei tests. The husband's test was negative.

Several extragenital cases have been reported involving the oral cavity with subsequent cervical adenopathy and fistulae. In these cases, after being confronted with positive Frei tests, a history of irregular sex habits was obtained.

Cases reported by Curth,¹⁰ and by Buschke and Curth¹¹ had the primary lesion of lymphogranuloma inguinale on the tongue. Later, the cervical glands were enlarged and fistulae developed. The reaction at the site of primary inoculation appears to be greater in these cases than when the primary lesion develops on the penis. Here, the early lesions are comparable

with the esthiomene and elephantiasis of the vulvae.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis of lymphogranuloma inguinale, the history of the temporary presence of a small innocuous-appearing lesion on the glans penis 3 to 10 days subsequent to sexual contacts, and followed by an inguinal adenitis in from 10 to 30 days should immediately excite one's suspicions to the diagnosis of this disease.

Other diseases that must be considered in every case of inguinal adenopathy are: syphilis, chancroid, granuloma inguinale, tuberculosis, Hodgkin's disease, tularemia, and pyogenic infections. In the case of *syphilis*, either the chancre or signs of its past existence can be located, the nodes are sharply defined, hard and painless, and rarely suppurate unless complicated by other infections. The dark field examination and repeated Wassermann test are the deciding factor. *Granuloma inguinale*, as stated before, is a skin and subcutaneous disease of venereal origin. *Chancroids* and their accompanying gland changes are probably the most difficult to differentiate from lymphogranuloma inguinale. It must be remembered that the primary lesion is on the penis, and the glands are secondary in chancroids, while this is not true in lymphogranuloma inguinale. The type of suppuration occurring in the lymph glands also differentiates the two diseases. In the acute painful adenopathy associated with chancroids, there is typically a massive suppuration, while in lymphogranuloma inguinale the nodes are less acutely inflamed and less painful, and there are multiple foci of suppuration. The bacillus Ducrey can be found in smears of the chancroid, and later there is a positive Ito-Reenstierna reaction. *Tuberculosis* and *Hodgkin's disease* are usually of a more generalized distribution and if sections are made, should offer little diagnostic difficulty. *Tularemia* and pyogenic lymphopathies reveal their point of origin to the careful examiner.

The greatest individual aids towards the correct diagnosis of the disease entity now recognized and diagnosed as lymphogranuloma inguinale are: (1) its recognition as a specific disease of venereal origin, and (2) the discov-

ery by W. Frei¹² of a specific diagnostic test.

The material for the preparation of the Frei antigen is obtained from the suppurating glandular tissue of a known case of lymphogranuloma inguinale. This material must be obtained under aseptic conditions and it is preferable that the subject has not had any other venereal disease. The material may be obtained by aspiration or incision. Following sterilization, control cultures are made and if no growth occurs, the material is diluted with from 5 to 10 parts of sterile normal saline, depending upon its thickness. The antigen is then placed in sterile ampules for future use. The virulence and specificity of the newly prepared antigen should be tested upon a known case of lymphogranuloma inguinale and upon a control. The patient from whom the antigen was made cannot be used for this test of specificity. The technic of the Frei test consists of the intracutaneous injection of 0.1 c.c. of the antigen. The reading is made in from 36 to 72 hours. If positive, there will be an elevated erythema several millimeters in diameter. In strongly positive individuals, small areas of necrosis may occur.

Frei antigen prepared as outlined above, and kept sterile, may retain its potency for as long as 6 months or a year, but one must continuously test its virulence upon known cases and its sterility by cultural methods.

Frei antigen prepared from the brains of mice infected with the virus of lymphogranuloma inguinale was found to be unsuitable for routine diagnosis by Strauss and Howard.¹³ They found that the brain emulsion from non-infected mice gave a reaction that is indistinguishable from a true positive test.

By the judicious use of Frei antigen, the diagnosis of lymphogranuloma inguinale can be satisfactorily made. It must be realized that the limitations of the Frei test are the same as those of other biologic tests, that is the presence of a positive Frei test does not always classify the disease under observation because of the fact that a previously acquired infection could account for the positive reaction.

It is well to remember that the very early case of lymphogranuloma inguinale will not give a positive Frei test. It is believed by some

authorities that the test does not become positive until the glands have increased in size and become fused to the skin. A more probable explanation is that the test becomes positive only after the patient's allergic mechanism has been stimulated.

Early cases of lymphogranuloma inguinale have a tendency to cause a false positive Wassermann reaction. Many cases have been treated as syphilis on the basis of these tests. If there is no evidence of a chancre, Wassermann tests should be repeated several times before treatment is started.

Several investigators have found that the serum of early cases of lymphogranuloma inguinale when injected intracutaneously into a known case gives a positive test, but this could not be repeated by other workers.

Once the Frei test becomes positive, it remains so for life, providing, of course, that the patient's allergic status is not disturbed by infection or lowered resistance. In such cases, a known positive Frei test may become negative.

CLINICAL COURSE

The clinical course of lymphogranuloma inguinale begins with the initial lesion, usually on the glans penis or in the urethra in the male, and on the external or internal genitalia in the female. The primary lesion may be anyone of four types, as described by Phylactos:

1. Herpetic type
2. Ulcerative type
3. Nodular type
4. A specific urethritis

All of these lesions may be transitory and pass unnoticed by the infected individual.

Within from five to thirty days after exposure, the patient becomes aware of a gradual enlargement of the inguinal nodes. His attention may be directed to this condition by the limitation of motion of the lower extremity rather than by pain.

In the male, the inguinal adenopathy is accounted for by the fact that the inguinal nodes and the deep iliac nodes drain the genital regions. The female genitalia drain directly to the lymph plexuses about the rectum, with

the exception of the clitoris and external vulvae that drain to the inguinal nodes. This accounts for the difference in the clinical picture presented by the male and female and explains the formed belief that males were more frequently infected than females.

Following the development of lymphadenopathy or associated with its occurrence, the patient may have an elevation of temperature associated with malaise, anorexia and headache. The lymph nodes gradually become matted together and painful as they increase in size and fuse with the overlying skin. After this fusion occurs, the skin assumes a reddish-violet hue described by Phylactos as the "adenite violette" and considered to be very diagnostic. As the tension on the skin increases, it becomes shiny, and many areas of necrosis develop in the underlying glands. Perforation occurs and multiple fistulae are formed. This process may be repeated as other glands become involved.

In the female, the draining lymph glands about the rectum develop an inflammation that spreads to the rectal walls by way of the lymph channels. Following this, these vessels become thrombosed and result in inflammatory changes followed by scar tissue formation with narrowing of the rectal lumen. These changes occur for the greater part in the lower 6 cm. of the rectum and rarely extend higher than 10 cm. Occasional cases have been reported by Levaditi and Revant in which the rectum of homosexual males has been involved.

Seneque concludes that there are four types of lymphogranulomatous strictures of the rectum.

1. A pure stricture limited to the rectum.
 2. A rectal stricture with elephantiasis of the external parts.
 3. Rectal stricture complicated by fistulae, and formerly classified as tuberculosis, even when Koch's bacillus was not found.
 4. Rectal strictures with pelvic cellulitis.
- These types, therefore, include anorectal syphiloma with stricture of Fournier and esthiomene. (Chronic ulcer of vulva with elephantiasis.)

Associated with these glandular changes, which may become generalized, are constitu-

tional signs and symptoms that range from polyarthrititis to various types of skin eruptions such as, erythema multiforme or erythema nodosum.

The course of the disease may be very prolonged or the patient may be able to overcome the infection with the aid of supportive measures in a short time. These extremes are well exemplified by two patients who were observed.

CASE REPORTS

Case 1. A white male, aged 32, unmarried, had observed an inguinal adenopathy following numerous sexual exposures. The glands continued to enlarge and become more painful until he was obliged to report to the hospital for care.

At the time of the first examination, there was no sign of penile scar. There was a bilateral inguinal adenopathy with numerous fluctuating points on the right side beneath a very tense bluish skin. Temperature 101°F. Leukocyte count 12,400. Wassermann test negative, Kahn test negative. No foci of infection or generalized disease could be held accountable for the lymphadenopathy. Frei antigen of proven value was obtained and the result of the test was a strongly positive reaction.

Under conservative treatment and strict bed rest, the suppurating glands were drained. Potassium and antimony tartrate were given intravenously biweekly in increasing dosage. The patient became very comfortable and began to gain weight. The glands decreased in size and 11 weeks after admission he was discharged as an arrested case.

Nine months later this same patient returned to the hospital with a recurrence of the same physical findings except that the glands of the left side were necrotic. The recurrence had developed following exposure and lowered resistance. The condition did not respond readily this time to symptomatic treatment. He was given a course of four diathermy treatments and was able to leave the hospital 14 weeks after admission.

Case 2. This case is described to show the association of cutaneous lesions. The patient was a white female, aged 23. This patient had been hospitalized for 28 months. There was history of gradual but continuous loss of weight associated with anorexia, headache and multiple draining fistulae in the inguinal region. There was no history of sexual exposure but the patient admitted having kept company with the opposite sex. The chest plates were negative. The Mantoux test was negative in various dilutions. Anemia was present; urine normal; Wassermann

and Kahn tests negative. Loss of weight, forty poundss. Frei test positive.

On examination of this girl, in addition to the draining fistulae in the left inguinal region, there were numerous lesions of erythema nodosum extending down the anterior surface of the left leg. The patient was extremely emaciated and in spite of selected diets and insulin she had not gained weight. Biopsy of the drainage tract did not give specific information. It was decided that she should be given the possible benefit of heat treatments and a course of diathermy treatments was given. The results were gratifying. The patient began to gain weight and after several months was able to leave the hospital in excellent condition.

INCIDENCE

The incidence of lymphogranuloma inguinale has been surprisingly high where routine Frei tests have been done. In the series of 1,010 persons tested by De Wolf and Van Cleve¹⁴ there were 58 positive reactions. Gray¹⁵ and others in St. Louis made a study of patients in the city hospitals and found that, of 790 Frei tests on white and colored patients, the incidence of lymphogranuloma inguinale in the white race was 3.4 per cent and in the colored race 40 per cent. The factor of race susceptibility is very striking in this series. Another point emphasized by these workers was the absence of a history of previous infection in 50 per cent of the patients tested.

Goldblatt¹⁶ found that 32 per cent of the prisoners quarantined for venereal diseases in the Cincinnati workhouse gave positive Frei tests when tested with several antigens.

PATHOLOGY

The general pathologic picture of lymphogranuloma inguinale is that of a subacute lymphadenitis. Difficulty is experienced in differentiating this condition from tuberculosis and syphilis microscopically. In certain of the cases, however, the microscopic picture is very characteristic. The disease has been diagnosed from a biopsy of the penile lesion before lymphadenopathy occurred.

When the involved glands are removed by surgical excision, there appears to be an enormous amount of peri-glandular exudate that has resulted in the matting together of the lymph nodes. If the nodes are removed early,

there is only an inflammatory congestion and a small amount of exudate. On section, the glands can be seen to have numerous individual stellate abscesses of various sizes. The necrotic material is of a whitish-gray color and is very thick.

The histologic picture, as described by Nicolas, appears to be definite one, and he believes it to be specific. There are numerous stellate abscesses with epithelioid foci and giant-cells together with numerous polymorphonuclear and round cells. The inflammation of the glandular epithelial structure is diffuse and causes the normal shape of the glands to be lost. The changes are greatest in the medullary portion of the gland. The gummas are formed of a central degenerated nucleus which is finely granular and surrounded by a wide band of epithelial cells. The leukocytes migrate through the epithelial borders of the gummas and abscesses are formed. These may assume any one of a variety of shapes, depending upon the portion of the gland involved. In their borders, typical giant-cells of large size with numerous nuclei are found. The entire glandular wall may be lost in the larger abscesses. The degenerated portion is made up of many polymorphonuclear cells and large acidophilic mononuclears. Numerous epithelial foci are found throughout the gland and parenchymal tissue that do not have giant-cells. The follicular lesions of the lymph nodes and the type of cellular exudate represent the morphologic characteristics of lymphogranuloma inguinale.

TREATMENT

The large number of suggested therapeutic aids convince one of their non-specificity. Treatments may be divided into four groups:

1. Physical
2. Surgical
3. Biologic
4. Chemotherapeutic

The physical agents employed in the treatment of lymphogranuloma inguinale are heavily filtered x-rays, diathermy, ultraviolet light, hot air, and hot baths. Of these methods, our experience has been limited to the use of diathermy and hot baths. The object is to elevate the general body temperature for periods ranging from 15 to 30 minutes daily in the hot bath,

and from four to six hours of continuous temperature elevation weekly by means of diathermy. The latter treatments are given until a course of from four to eight have been completed. Our results from the use of diathermy compare favorably with those from other therapeutic agents, especially in the late cases.

Surgically, it has been suggested that the entire glandular adenopathy be removed. The contra-indication to this procedure is the possibility of subsequent lymph stasis of the lower extremity. Nichols, Barthels and Biberstein agree with Frei that partial removal of the involved glands gives good results. This is especially to be recommended in the early cases.

The histologic agents suggested include foreign protein, autohemotherapy and the intracutaneous injections of Frei antigen at regular intervals as recommended by Wein and Perlstein of Chicago.¹⁷

Chemotherapeutic agents generally used in the treatment of lymphogranuloma inguinale are: 1 per cent antimony and potassium tartrate given biweekly in doses beginning with 5 c.c. and increasing gradually to 10 c.c. for a period of from six to eight weeks. Potassium iodine by mouth and intravenously. The salts of copper, arsenic and mercury have been used. With the exception of antimony and potassium tartrate, the use of these drugs has been disappointing.

SUMMARY

In summarizing the effectiveness of the variously recommended therapeutic agents, it is very probable that supportive measures, as bed rest and a nourishing diet in connection with the partial extirpation of glands in the early cases, of the institution of full drainage in the late cases together with potassium and antimony tartrate offer the most effective therapeutic attack. In the late cases of esthiomene and of anorectal strictures, the results of treatment are routinely poor.

1. Lymphogranuloma inguinale is a chronic, low grade inflammation of the lymphatic nodes of venereal origin, resulting in complications of fistulae, esthiomene, or the anorectal syndrome in an estimated 50 per cent of infected persons.

2. This clinical picture has been described under a variety of titles since the middle of the 19th century. It was probably known before that time.

3. It has also been known for some time that the disease was a specific entity and was probably venereal in origin. Many confusing terms are found in the literature, including conditions with similar names without any other relationship.

4. A filterable virus is thought to be responsible for the disease. The disease has been successfully transmitted to apes, mice, rabbits and other laboratory animals.

5. In the ape, the virus appears to have a special affinity for the central nervous system tissue causing an encephalitis.

6. The disease is mainly one of adult life although occasional cases are reported in children.

7. The history of a small innocent appearing lesion on the glans penis, three to ten days after sexual relation, followed by inguinal adenitis in from 10 to 30 days, should make one suspicious of lymphogranuloma inguinale.

8. The differential diagnosis should be made from syphilis, chancroid, granuloma inguinale, tuberculosis, Hodgkin's disease, tularemia and pyogenic infections.

9. Frei antigen tests are of great value in making diagnosis.

10. Be sure the antigen is potent at the time of use.

11. Limitations of the Frei test are identical with those of other biological tests. Early cases of lymphogranuloma inguinale have a tendency to give a negative Frei and a false positive Wassermann reaction.

12. Once a Frei test becomes positive, it remains so for life providing of course that the patient's allergic status is not disturbed by infection or lowered resistance.

13. Through this test, it has been learned that many people have had this disease.

14. In the male, the inguinal adenopathy is accounted for by lymph drainage. In the female, involvement about the rectum is explained on a similar basis.

15. As the disease progresses, the infected lymph nodes mat together and become pain-

ful. Fusion with the overlying skin produces and appearance which is highly suggestive of the disease.

16. The rectal involvement may give confusing clinical pictures.

17. The course of the disease may be prolonged or the patient may be able to overcome the infection within a relatively short time.

18. Frei tests done on groups in the population in which the venereal diseases rank high often show a large number of positive tests.

19. The treatment is physical, surgical, biological, and chemotherapeutic.

20. Supportive measures, bed rest and a nourishing diet with partial extirpation (to avoid lymphastasis) of the nodes in the early cases or full drainage and potassium and antimony tartrate in the late cases of anorectal involvement are the best methods of treatment, but even then the results are routinely poor.

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DISCUSSION

Dr. E. von Haam (New Orleans): Dr. Tedder has covered the subject so thoroughly there is very little to add, but I should like to make one point concerning the value of the antigen for the Frei reaction, which is of interest.

As you know, various antigens have been recommended. While the human antigen has been used by Frei, mouse-brain antigen has been recommended in the United States by us and by Grace. Other authors have contended, however, that mouse-brain antigens, if permitted to age, give a false reaction. We have retested samples of our stock antigen which was anywhere from two months to two years old and have found that mouse-brain antigen, if kept sterile in the ice box, does not lose its specificity, although it may lose some of its sensitivity.

An important factor in making the Frei test is the choice of material used as control. We cannot use saline solution or broth for a control of a test where small molecular particles are injected into the skin. For the Frei test we inject emulsions and not solutions and therefore only emulsions of a similar molecular size as the antigen should be used for control. We have found that from 10 to 20 per cent of our patients when injected with normal mouse-brain emulsion give a slight reaction. However, the specific antigen will produce a much more severe reaction in a positive case than the control.

In connection with Dr. Tedder's remarks on therapeutics I wish to state that we have tried to treat patients with specific antigen. Our experience is not sufficient to draw any definite conclusions. But, at the present time, I believe that at least temporary improvement can be produced by intravenous injection of 0.1 c.c. of mouse-brain antigen in acute and chronic lesions.

Dr. Tedder (In conclusion): I think Dr. von Haam has successfully eliminated the objections to the use of the commercially prepared mouse brain antigens for the cutaneous test in lymphogranuloma inguinale. It is true that this test with the mouse brain antigens was objected to by most investigators when it was first introduced. When compared to the mild reaction obtained with the control test of normal mouse brain, the prompt reaction of the positive Frei test is unmistakable.

As to the use of the Frei antigen in the treatment of lymphogranuloma inguinale, I have only had experience with two cases, and in these it was not given in the acute stage, nor was it given intravenously, but subcutaneously, 0.1 c.c. doses weekly, and we were not able to detect any improvement in the patient after six or eight weeks.

SUPERIOR PULMONARY SULCUS TUMOR

REPORT OF A CASE

A. MAYORAL, M. D.

and

IRA H. WILSON, M. D.

NEW ORLEANS

Ever since Pancoast¹ selected "Superior Pulmonary Sulcus Tumor" as the subject of his chairman's address to the Section on Radiology of the American Medical Association in New Orleans in 1932, there have appeared references to the subject in the literature from time to time. Considerable confusion has arisen concerning the origin of these tumors; but a clinical syndrome has been agreed upon by most reporters, consisting of pain around the shoulder and down the arm, Horner's syndrome, and atrophy of the muscles of the hand and forearm, roentgenographic evidence of an apical neoplasm, rapid rib destruction, and often vertebral infiltration. Pancoast¹ postulated origin from a vestige of the embryonal branchial apparatus and especially directed attention to careful examination of the neck region roentgenologically in cases of tumor of the apex of the thoracic cavity.

It is felt that the need has become manifest for more cases to be reported in the literature so that the whole subject may become clarified eventually.

As early as 1838, a case of this type was reported by Hare² from London. Interest in the subject has revived in recent years, especially since Pancoast's address, but no clear-cut evidence yet exists for a specific pathologic entity. Instead, writers^{7, 8, 10} are more and more in agreement that this type of clinical syndrome can be produced by a variety of pathologic lesions, particularly tumors, and these may be of bronchial, pleural, nervous, or branchial origin, for example, or may be metastatic from some distant focus. Some writers⁸ fail to see the logic of the term "superior pulmonary sulcus tumor" as used by Pancoast since no such anatomic structure as "superior pulmonary sulcus" is defined. It is objected that, at best, it is only a clinical syndrome. However, this term and

a well-defined clinical description have appeared repeatedly in recent literature, and the following case is reported for any value that it may have as an addition to the small series already reported, particularly since a rather complete study was possible in this instance.

CASE REPORT

T. G. C., a white merchant seaman, shipmaster, aged 54, was admitted to the Marine Hospital, New Orleans, on January 18, 1934, on the Tuberculosis Service, on transfer from the U. S. Marine Hospital at Galveston, Texas, with a diagnosis of: (1) tuberculosis, pulmonary, chronic, active and (2) pleurisy, fibrinous.

Two days following exposure in a hurricane in August 1933, the patient noted a deep-seated pain in the upper part of his left chest and shoulder which gradually increased in intensity and area and came to include the entire left side of the chest and neck, shoulder, arm, and hand. About three weeks following exposure, the pain became so severe that he applied for treatment at the U. S. Public Health Service Relief Station at Corpus Christi, Texas, and was admitted a week later to

the Marine Hospital at Galveston. The condition gradually became worse and the patient was transferred to New Orleans on January 18, 1934, about five months after the accident. During the month prior to admission, he was troubled with drenching sweats which were limited to the trunk and upper left extremity; however, large quantities of aspirin had been ingested. There had been a progressive muscular weakness of the entire left arm since the onset of the illness. He had lost 30 pounds. No cough, no hemoptysis, and no fever had been experienced.

The patient admitted moderate drinking; admitted gonorrhea at age of 18, and syphilis in 1913, with three courses of anti-luetic therapy. The past history was otherwise irrelevant.

Physical examination revealed a well developed but poorly nourished cachectic male, apparently in considerable pain. The left pupil was contracted but both pupils reacted to light and accommodation. The teeth had been removed as an aid to treatment. The tongue was coated. The neck was apparanetly normal, with very wrinkled overlying skin; no tumor mass palpable. The thyroid was not palpable. Chest was normal in shape; ex-

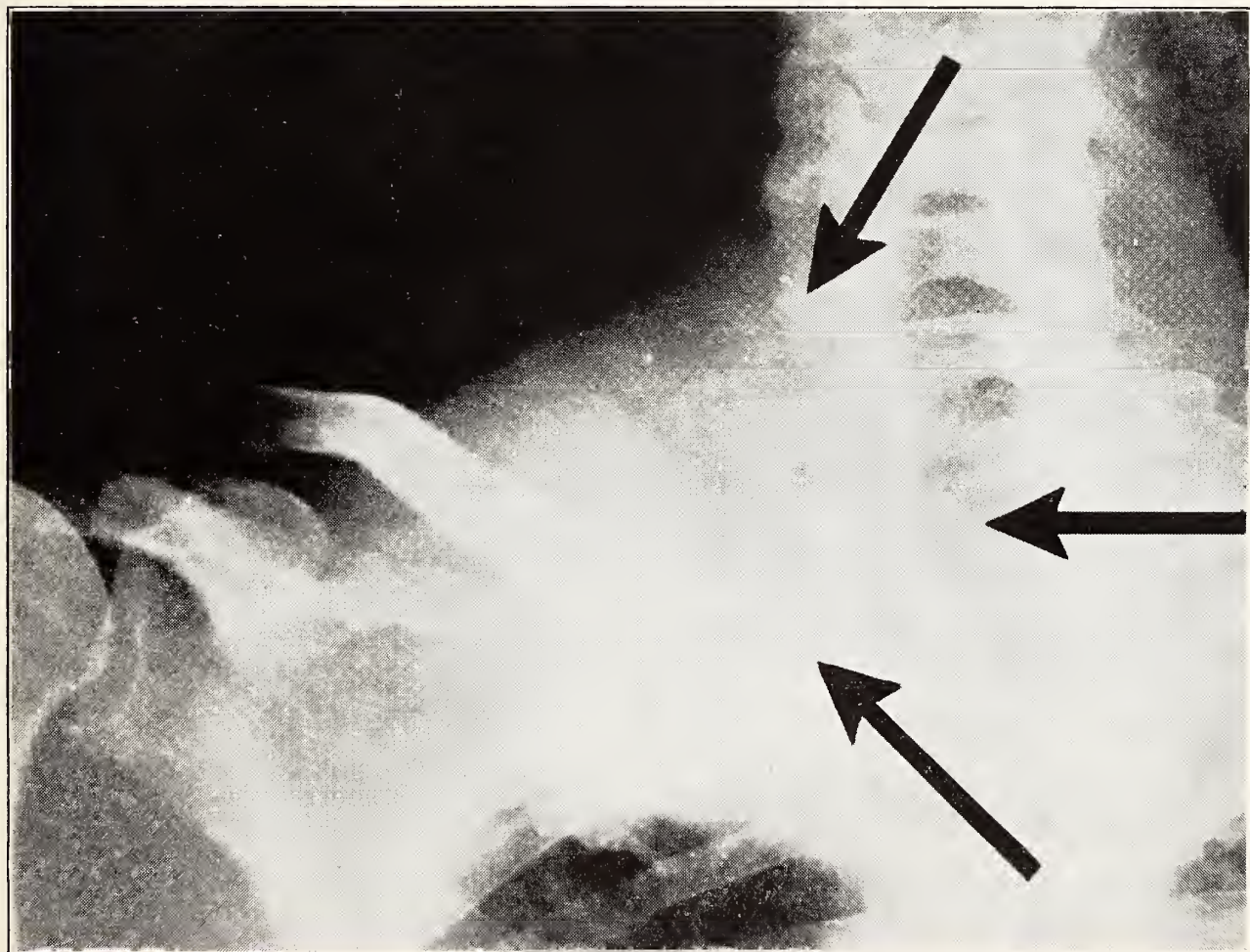


Fig. 1. Roentgenogram of tumor mass made on May 22, 1934.

pansion good and equal. Lungs were resonant throughout except for dullness to percussion over left apex posteriorly. Vocal fremitus equal on both sides and not exaggerated. Breath sounds were slightly harsh, but no rales heard. Fine friction rub at left base, not definite. The abdomen was negative except for some tenderness in the epigastrium. Genitalia and rectum negative. Left arm somewhat smaller than right; marked weakness of left arm, forearm, and hand. Left leg appeared smaller but not weaker than the right. No evidence of bone or joint disease, grossly. The reflexes were normal. Horner's syndrome present. Epitrochlear and inguinal nodes palpable.

Roentgen examinations were made over a period of seven months prior to death, at Galveston and New Orleans. September 25, 1933, at Galveston, examination revealed what appeared to be an old fibrosis of the left apex. November 4, re-examination confirmed the above lesion, and failed to reveal evidence of bone destruction or injury. January 20, 1934, at New Orleans, there was found marked density at the left apex but still no evidence of bone destruction. However, neoplasm was suspected. On January 29, the same condition without bone destruction was reported. On February 5, some bone destruction of the left first rib and left transverse process first dorsal vertebra. Pancoast's syndrome was suspected, and careful examination revealed the presence of Horner's syndrome. Roentgen rays on February 21 revealed no change in size of the neoplasm. On March 19, extensive bone destruction of transverse process of first dorsal was found; April 2, bone erosion, transverse processes of seventh cervical, first dorsal vertebrae, and head of first rib; April 9, no further advance; May 1, greater bone destruction than shown in previous film.

Laboratory: Urine was negative except for a trace of albumin and occasional casts. Sputum was repeatedly negative for tubercle bacilli. The stools were free from parasites. Sedimentation time, 43 minutes. Erythrocytes, 3,570,000; leukocytes, 9,000; small mononuclears, 20; large mononuclears, 2; eosinophils, 3; neutrophils, 75. A few days before death, the erythrocytes were 1,460,000, leukocytes 22,150; small mononuclears 10, large mononuclears 1, neutrophils 89. The Kahn test was repeatedly negative. The spinal fluid was essentially negative. Blood chlorides, 412.5 mg. per cent. Glucose tolerance test: fasting 67.7 mg. per cent; half hour 137.0; one hour 126.0; two hours 68.0; three hours 90.0.

Course: The patient was transferred to the Medical Service. A constant afternoon fever was found, which persisted until death, at no time exceeding 38°C., and then only for a day or two. This, coupled with the early roentgen ray findings, led to the belief that he had tuberculosis. However,

the presence of Horner's syndrome, unilateral sweating, shoulder and arm pain with wasting of the upper extremity, could not be explained, and consequently further studies were prosecuted.

Peripheral neuritis was considered, and the patient improved for a time under treatment for this condition, being able to get up and about the ward without opiates. Roentgen study on February 4, 1934, following a relapse, revealed bone destruction, and the treatment was changed. The clinical diagnosis was malignant tumor involving the left apex and cervical region.

A biopsy was done March 17, 1934, and the tissue diagnosed squamous cell carcinoma, primary origin undetermined, Broder's classification four, by Dr. J. A. Lanford, pathologist. A specimen submitted with history of the case and roentgen rays to Dr. Pancoast, at the University of Pennsylvania, elicited the opinion that "it may be a case of pulmonary sulcus tumor, especially in view of the destruction of the first rib and a portion of the second rib, both posteriorly, erosion of the sides of the first two thoracic vertebrae and the shadow in the left apical region. The points against the lesion being one of primary pulmonary sulcus tumor are the exact location of the pain and nodular involvement and the soft tissue bulging in the neck." He further states: "All of our cases of sulcus tumor have produced Horner's syndrome in time, and have not produced bulging in the neck, while the latter is more common in metastatic tumors and in lung tumors which have metastasized."

Later, after consultation over the slides with Dr. McFarland, Dr. Pancoast concluded that we were dealing with a true sulcus tumor, since Dr. McFarland did not think it of pulmonary origin from examination of the slides.

Meantime, a report from the National Institute of Health on our biopsy specimen stated: "Transition cell epithelioma, metastatic lymph node."

The patient failed, requiring larger and larger doses of opiates. Tumor growth was rapid, and anemia increased. He weakened rapidly and finally died on June 10, 1934, about 10 months after onset of the symptoms.

Gross Examination of Organs: A careful search of the tongue, tonsils, and the larynx fails to show any evidence of neoplasm. The trachea and the bronchi are not distorted or collapsed as a result of the new growth. The thyroid is grossly negative.

Heart: Firmly contracted on the left; somewhat flabby on the right. It is uniformly of a dark brownish color, with some hypertrophy of the left ventricle and some increase in connective tissue. On sectioning, there is increased resistance to the knife. There is practically no fat on the epicardial surface. The valves of the heart are negative for pathology.

The coronary vessels are sclerosed, but not occluded. The foramen ovale is closed. The attached portion of the aorta is relatively free from arteriosclerosis, but in the arch and to lesser degree in the thoracic aorta and to a marked degree in the abdominal aorta, arteriosclerosis is far advanced, there being many areas of calcification above the bifurcation of the iliac.

Lungs: Both lungs are somewhat voluminous. The left lung shows a neoplastic involvement in the apex as a result of infiltration. The remainder of the left lung is irregular and of an uneven consistency as a result of lobular pneumonia in various stages of development. The outer pleural surface generally presents a number of areas of adhesions. The right lung is likewise the seat of lobular pneumonia and many areas of emphysema, and in addition there is found in the apex one small secondary neoplastic nodule measuring, irregularly, 3 cm. in diameter, and on sectioning presenting the same gross appearance as the primary neoplasm in the left sulcus.

Tumor Mass: Roughly quadrilateral in shape, measuring 6 by 6 by 14 cm.; is made up of neoplastic growth infiltrating into the surrounding muscle and attached to which is the internal half of the left clavicle and the anterior two-thirds of the first and the second ribs. This growth extends above the clavicle as a fluctuating mass and has extended anteriorly onto the chest wall beneath the clavicle, and internally to the line of the esophagus, pressing upon that organ and interfering with its function; posteriorly it has extended backward and involved the sixth and seventh cervical and the first, second, and third dorsal vertebrae, the bodies of which are markedly destroyed and replaced by neoplastic growth. Beneath the clavicle the growth has incorporated the brachial plexus, and, above, the cervical plexus is partly encroached upon. The sub-clavian and the axillary arteries are completely surrounded by the new growth, and their lumens are interfered with by the infraction of this growth. The growth is generally firm. On sectioning, there is no marked resistance to the knife, the cut surface being an irregularly yellowish-pink mass with many areas of necrosis. The mass has encircled the nerves, partly infiltrated into them, and has encircled and narrowed the subclavian and the axillary arteries. The neoplastic growth is of a pinkish-ivory color relatively firm in consistency. This growth has encroached upon, if not originated in, the left sulcus of the pleural cavity, and the adjacent parietal pleura is incorporated in the growth. The adjacent portion of the lung is also encroached upon by the new growth; and upon removal of the neoplasm from the lungs, pigmented lung tissue is adherent.

On sectioning the fluctuating portion above the clavicle there is a cavity encountered which has,

for the most part, a relatively smooth wall that is filled with blood. The lower portion of this cavity is made up of neoplastic growth undergoing degenerative changes with hemorrhage. This neoplasm has encroached very markedly on the mediastinal structures. On sectioning through the posterior portion of the growth there are revealed many spicules of bone from the vertebral bodies.

Spleen: Somewhat increased in size and shows fibrosis. There is in the outer border a large infarcted structure and in the lower a smaller area of infarction. These are a dirty yellowish color, quite firm in consistency and have some of the ear-marks of a possible neoplastic growth, as there is no suggestion of an inflammatory reaction. The pulp of the organ is somewhat increased in density. The connective tissue is increased and the Malpighian bodies are not demonstrable.

Liver: A dark purplish-red color, somewhat nutmeg in appearance, the central veins being definitely congested. There is some increase of the density generally of this organ. The left lobe is occupied by a number of neoplastic nodules varying in size from 3 mm. to 3 cm. On sectioning they appear as a definite mosaic within the liver substance, infiltrating and pushing the liver substance. The cut surfaces are of a dirty yellowish-gray appearance, with some areas of necrosis.

Kidneys: Both kidneys are somewhat increased in size and show a number of neoplastic nodules, which appear both in the cortex and the medullary substance. Several of these apparently began at the bifurcation of a small radicle of the renal artery. The organ generally is firm, and there is no contrast between the cortex and the medulla. There is a slight increase of connective tissue, and the blood vessels are somewhat more prominent. On peeling back the capsule there is some pulling up of the underlying substance.

Adrenals: Both adrenals are partly replaced by neoplastic growth which apparently began within the medullary substance and pushed the cortical portion in front of it. On sectioning, the neoplastic structures appear identical with those of the primary growth.

HISTOLOGICAL REPORT

Heart: Fibers hypertrophied; pyknotic changes in the nuclei; parenchymatous and fatty degeneration; fibers widely separated by edema. In some areas connective tissue is markedly increased and lime salts deposits are shown.

Lungs: Edema; congestion; lobular pneumonia. Other areas of the lungs are replaced by squamous cell carcinoma.

Peri-bronchial Lymph Nodes: Partly replaced by embryonal epithelial cells differentiating into squamous cell structures.

Spleen: Increased connective tissue; narrowing of the Malpighian corpuscles; congestion; areas of infarction.

Liver: Passive congestion; fatty degeneration; parenchymatous degeneration.

Kidneys: Arteriosclerotic changes in the blood vessels; chronic interstitial nephritis.

Adrenals: Secondary carcinoma.

Primary Growth: Masses of neoplastic cells occurring in irregular areas surrounded by a connective tissue stroma. These structures are irregular in size and outline and are made up of embryonal epithelial cells which are differentiating into keratinized structures, some forming epithelial pearls. A few of the cells are in mitosis, and intercellular bridges are noted between some of them.

ADDITIONAL HISTOLOGICAL REPORT

Primary Mass: Section of the primary tumor and its connection with the apex of the left lung shows a rather unusual differentiation of the tumor cells. Most of the older cells show an arrangement suggestive of squamous epithelia and areas of keratinization. In other areas the tumor cells are forming definite glandular acini, and some of the masses of glandular cells show striking colloidal changes. The metastases to all organs arrange themselves in glandular acini, there being but little inclination to show metaplasia and squamous cell arrangement.

ANATOMICAL DIAGNOSIS

1. Primary neoplasm in the left pulmonary sulcus and the lower portions of the cervical region, with secondary nodules in the lungs, liver, kidneys, and adrenals.
2. Brown atrophy of the heart, dilatation, chronic myocarditis.
3. Arteriosclerosis.
4. Lobular pneumonia, edema and emphysema of the lungs.
5. Chronic interstitial nephritis.
6. Secondary anemia.
7. Inanition.

COMMENT

This case fulfills the clinical criteria as generally agreed on for diagnosis of a "superior pulmonary sulcus tumor." No attempt is made to justify it pathologically, because of the wide variety of types of tumors that have been reported as causing this clinical picture. As previously stated, Hare's case in 1838 was probably the first case reported. Naturally, no histologic study was done at that time, but Hare's gross description of the lesion at autopsy fits very well.

Frost and Wolpaw³ reported a case, in March 1936, arising from the sympathetic nerves of the neck; Jacox, in 1934⁴ reported one case, a bronchiogenic, mucin-forming adenocarcinoma; Steiner and Francis⁵ reported two cases in 1934, one a mucin-secreting adenocarcinoma, probably not branchial; Clarke⁶, in 1934, reported one case, an epidermoid carcinoma in which origin from a bronchus or branchial pouch could not be eliminated; Fried⁶, in 1932, reported two cases, one a primary carcinoma of a bronchus, the other a squamous cell epithelioma of bronchial origin; Browder and DeVeer⁸, in 1935, reported two autopsied cases, both squamous cell carcinoma, arising in the right upper lobe. Graef and Steinberg⁹ in September 1936, reported a limited autopsy on a case with this clinical syndrome, which revealed a pleomorphic epithelial tumor with a thin, plaque-like extension to the visceral pleura and metastasis to the kidney. They were unable to rule out branchial origin, because the autopsy did not include the neck.

The case herewith reported includes a gross study of these neck organs. In the cases reported in the literature there appears to have been no strenuous effort made to find a source of the tumor in the neck organs derived from the branchial clefts and pouches.

SUMMARY

1. A case clinically conforming to the characteristics of the syndrome commonly known as Pancoast's syndrome is reported, in which autopsy revealed a large, infiltrating, rapidly growing new growth in the apex of the left thoracic cavity, involving the lung, pleurae, ribs, vertebrae, vessels, nerves and lymph structures in this region.

2. No branchial source was discovered on careful examination of the neck region.

SUPPLEMENT

The following case was observed by us after the above was written. We wish to add the following:

The patient was admitted December 29, 1936, diagnosed somewhere else as tuberculosis, pulmonary, chronic. Roentgen ray study of the chest made the following day suggested a tumor of the superior sulcus and it was re-

quested to examine patient for the clinical signs of Horner's syndrome. These were present and the diagnosis was changed accordingly. The patient was transferred to the Hines General Hospital on January 14, 1937, where he died on the 20th of the following month. An extensive and careful autopsy done at the latter hospital confirmed our diagnosis: Carcinoma, bronchiogenic, right apex (superior pulmonary sulcus, Pancoast type).

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LUNG ABSCESS

REPORT OF A CASE IN A CHILD*

PHILIP C. DEVERGES, M. D.

NEW ORLEANS

Lung abscess is a localized suppurative process terminating in cavitation. The pulmonary lesion begins as an area of suppurative pneumonia which resolves or which may undergo necrosis, liquefaction and cavity formation. Surrounding the cavity is an area of infiltration which contains the infecting organism which may continue to excavate, thus resulting in the formation of an enlarging abscess or of multiple abscesses.

Several factors contribute to the development of lung abscesses. As a postoperative complication it occurs more frequently than from any

other cause. In a combined series of 2548 cases reported in the world literature 657, or 26 per cent, followed some type of operation and 360 or 54.8 per cent of these followed tonsillectomy.

Wessler and Hedbloom in their series found that 28 per cent and 21 per cent respectively followed tonsillectomy. Lord reports an even higher figure of 34 per cent.

Much interest has been shown in recent years as to whether abscesses following tonsillectomy are due to blood stream infections or from aspiration of infected material. Cutler and his associates found it impossible to produce abscess in dogs by instilling infected material into the bronchial tract but were able to produce abscess readily by introducing infected material into the jugular or femoral veins. They often found emboli infected in veins in the tonsillar fossae in patients following tonsillectomy. They pointed out the action of the pharyngeal muscles as favoring the dislodgment of such infected thrombi in the venous circulation. Yet on the other side of the question a number of investigators as Smith, Allen and Joannides have been able to produce abscesses experimentally in animals, including the dog, under conditions that closely simulate clinical conditions. Besides these experiments the clinical evidence is very striking. Bronchitis is the most frequent postoperative pulmonary complication and it has been shown by Smith and Robinson that infection in the bronchus may pass through the damaged mucosa into the pulmonary tissue by way of the lymphatics and also by the fact that most postoperative pulmonary abscesses follow operations under general anesthesia during which the protective pharyngeal reflex is obliterated in whole or in part. Pneumonia is also apparently a frequent cause of pulmonary abscess. In Lord's series of 227 cases the etiologic agent was definite in 76 or 33.4 per cent. In 59 cases, collected by Smith and McBride, pneumonia was the causative factor in 22. Hedbloom expresses the opinion that the impression that pneumonia in its various forms is a frequent cause of abscess is probably due in part to the fact that pneumonia is of such frequent incidence and in part

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to the fact that in many cases the first clinical manifestations of the disease are those of a pneumonia or pneumonitis.

Aspiration of foreign bodies is also a frequent cause of pulmonary abscess in children. In two reported series approximately 10 per cent of the lung abscesses are noted as giving a positive history of aspiration of a foreign body. The great majority of solitary lung abscesses localize in a relatively small area, comprising the apex of the lower lobe posteriorly and the posterior tongue of the upper lobe. At some point they are nearly always close to the surface in a region between the third and seventh rib posterior to the scapular line. The distribution in a group of 238 cases reported by Freeland occurring at the Cleveland City Hospital was as follows:

Right upper lobe, 59 or 24.7 per cent; right lower lobe, 63 or 26.4 per cent; right middle lobe, 21 or 8.8 per cent; left upper lobe, 20 or 8.4 per cent; left lower lobe, 55 or 23.1 per cent; multilobular, 20 or 8.4 per cent.

The organisms most frequently present in lung abscesses are streptococcus, pneumococcus, Pfeiffer's bacillus, staphylococcus, Vincent's organism and fungoid organisms, the spirochetes and fusiform bacilli of the mouth.

SYMPTOMATOLOGY

As a result of the inability of infants and young children to expectorate the sputum which is frequently of diagnostic importance, the diagnosis is more difficult than in adults. Frequently the history of a recent operative procedure or the possible aspiration of a foreign body followed by expectoration of a varying amount of foul and discolored sputum may suggest a diagnosis. In postpneumonic abscess the process, instead of resolving, persists, as well as cough, while the sputum becomes purulent. Even in the cases where the sputum is swallowed the odor of the breath is significant. Wessler and Schwartz are of the opinion that postpneumonic abscesses may be divided into two classes; one in which the pneumonia runs its typical course until about the thirteenth day when the classical signs of abscess present themselves, and the other in which the pneumonia persists instead of resolving and ultimately changes to a chronic, indurative type

with multiple bronchiectatic cavities. As a rule the disease in acute cases commences with a sudden onset of fever, malaise and frequently chills. Cough develops early, at first dry, often paroxysmal and exhausting and distressing. At first dry, it gradually becomes looser and small quantities of muco-purulent sputum appear to become purulent and increased in quantity as the abscess makes communication with a bronchus. This increased expectoration as a rule continues for some days and then gradually falls to a lower level at which it remains about constant. At times it will cease for a while to be brought up again suddenly in large quantities due to a temporary occlusion. The odor of the sputum is usually offensive from the time it becomes purulent. Fever is usually present and is increased with retention of sputum. Hemoptysis is common and at times may be severe. Clubbing of the fingers and the toes when the history is of short duration is suggestive of abscess. There are no physical signs that are characteristic. Impairment of percussion note is constant, frequently with some flattening of the affected side. Most commonly the signs are those of consolidation and occasionally of cavitation. If an abscess is present the signs vary as the cavity fills and empties. Leukocytosis is usually present. In the earlier stages of the disease, failure to see a pulmonary cavity on roentgen examination is frequent, as the area of suppuration may not as yet have undergone excavation. In infants, because of the early extension of the process to the pleura with the development of an empyema, the primary condition is most likely overlooked. The most common complication is an empyema or if a broncho-pleural fistula as in the case to be reported, a pyopneumothorax.

DIAGNOSIS

Diagnosis of pulmonary abscess in children is more difficult than in the adult. The clinical picture is frequently absent or not as marked as usually seen in the adult, and we must depend upon the history, the few physical signs that may be present, pyrexia and cough to arrive at a definite conclusion. Roentgen rays are useful in confirming these signs but their main purpose must be to locate the position of

the abscess and assist in its classification. Conditions most likely to be mistaken for pulmonary abscess are tuberculosis, bronchiectasis, suppuration due to aspiration of foreign bodies and interlobar empyema.

TREATMENT

As regards the treatment of pulmonary abscess our first aim should be that of prevention. This may be accomplished by proper anesthesia, position of the patient and removal of secretions to prevent aspiration into the airways. In addition, in known cases of aspiration of materials into the air passages, bronchoscopic removal should be carried out immediately. Crowe and Scarff state that no pulmonary abscess complicated 3500 consecutive tonsillectomies at Johns Hopkins Hospital, due to careful operative technic including the Trendelenberg position. Once the condition has developed the conservative treatment should be adopted as long as improvement is progressive. According to Wessler and Schwartz one third of the pulmonary abscesses in children are cured by conservative measures within two months. These measures consist of rest in bed, an abundance of fluids by mouth, supplemented if necessary by proctoclysis and hypodermoclysis, a high caloric diet and transfusion of blood if indicated. Sedatives and opiates may be used for cough and pain. However, they must be used with caution as they may interfere with drainage. Creosote inhalations may be used and at times successfully in relieving cough. In those cases of Vincent's infection, intravenous injection of arsenic is most beneficial. Postural drainage is also a valuable measure in the conservative management of abscess. Its use is to be governed by its effectiveness in producing evacuation of secretions and by the ability of the patient to tolerate it. The sputum obtained should be measured if possible during each treatment. A careful study of the location of the abscess must be made to obtain the correct posture for the most adequate drainage in each individual case. Bronchoscopy should also be considered in localizing the bronchus from which the pus exudates as well as to encourage drainage by removing any inspissated pus and by increasing the size of the opening to allow better drainage.

CASE REPORT

D. G., a white female, aged 9 years, was admitted to the hospital with the following history:

After several attacks of "colds" during November and early part of December, the child on returning from school on the evening of December 17 was febrile, complained of pain in right side accompanied by a dry cough. On the following day she was brought to the family physician's office, and after an examination a diagnosis of pleurisy was made and mother advised to return home immediately, to put the child to bed, and to administer medication and nursing care as ordered. After a night of apparent comfort, the child was again seized with a violent pain in same location, attended with some difficulty in breathing. A diagnosis of pneumonia was then made, counter-irritants in the form of mustard and flaxseed poultices were ordered, with the usual routine treatment. The temperature was remitting in type from a minimum low of 100 to a maximum high of 104. Pain continued to be marked, with occasional relief by the use of codeine and aspirin. These symptoms continued until January 3, when the patient became afebrile and the pain ceased. This favorable improvement continued until January 7 when temperature and difficulty of breathing again manifested themselves and continued until admission to Mercy Hospital on the evening of January 10.

Examination on admission revealed an emaciated child, marked pallor, and physical evidence of a recent severe illness. On physical examination there was complete absence of breath sounds over whole right lung, with marked dulness on percussion. Lack of tactile fremitus and diminished motion of right chest were observed. Moderate amount of pain and tenderness were present on palpation in right lower quadrant of abdomen. Diagnosis of empyema was made, which was corroborated by the roentgenogram with the additional information that a pneumothorax was also present. The presence of air in the pleural cavity was thought at the time to be due probably to a ruptured vesicle. Thoracotomy was done the following morning when about 150 c.c. of a most foul odored material was removed and drainage instituted by the use of catheter left in situ. With daily aspiration there was a gradual daily improvement both in the physical signs and general condition of patient, relief of respiratory distress, steady decline in temperature and an increased comfort to the child. This steady improvement continued until February 1, when the temperature again began to climb assuming a septic character, the patient again became listless, anorexic, restless with a true toxic appearance. A roentgenogram taken on February 2, 1937, showed an increased density of the lower half of right chest probably due to

fluid in pleural cavity, plus thickened pleura. The left lung was normal. Blood count then showed a total count of 24,400 white cells with 89 per cent neutrophils. This condition continued until the afternoon of the 14th when the child while sleeping suddenly developed a continuous, distressing, exhaustive cough which lasted for about two hours, accompanied with a cold clammy sweat, pinched features and rapid and feeble pulse and cyanosis. On auscultation subcrepitant rales were heard over the whole lung. Opiates to control the cough and oxygen for the dyspnea and cyanosis, together with stimulants, were administered. I was strongly then of the opinion that contrary to the roentgen ray findings we were dealing with a ruptured abscess into a bronchus especially when the child, after the shock, began expectorating again sputum of foul odor, although a roentgen ray taken the day previous disclosed an increase of density over lower two-thirds of right chest most likely due to a thickened pleura with a partial atelectasis of middle and lower lobes. Left lung normal. Another taken February 15 showed the upper two-thirds of right lung now aerated. There was a large rounded area of increased density in the lower lobe most likely due to lung abscess. Left lung normal. At this time physical examination by auscultation revealed numerous moist rales over whole lung with normal percussion note except at the base. The temperature, dropped to an average normal and the general condition of the child showed again an improvement. Roentgenogram taken on February 18 was reported as follows: Pneumothorax of right chest with collapse of the middle and a portion of the lower lobe. There is a broad band of increased density extending from the diaphragm to the upper lobe due either to a thickened pleura or collapsed lung. The rounded portion of increased density seen at the base in radiograph of the 15th is now replaced by an area of decreased density probably due to evacuation of the abscess cavity. The condition appeared improved. Examination of sputum showed the presence of streptococci, staphylococci, pneumococci. Blood examination: total white 23,100 with neutrophil count of 87 per cent. Roentgenogram of February 24 disclosed multiple lung abscesses lower lobe of right lung with apparently good drainage throughout bronchi. Pneumothorax of right chest with about 50 per cent of lung expansion. Left lung normal except for moderate increased markings at the base. Condition improved.

With this apparent improvement both in the physical signs and roentgen rays, with a temperature normal, the weakened physical condition of the child did not revive, her resistance did not improve, the pulse was continuously rapid, weak and feeble. Cyanotic attacks occurred frequently, neces-

sitating the almost continuous use of oxygen and the child expired during sleep on the night of February 27.

AUTOPSY PROTOCOL

Autopsy held on the body of D. G. at Mercy Hospital on February 27, 1937, at 5:30 a. m. by Drs. G. H. Hauser, D. G. Graham and L. A. Morrogh.

Body: The body is that of an emaciated female child, body length 4 feet, aged 9 years. Lividity is present on the back. The pupils are equal and regular and measure 2.5 mm. in diameter. The skin is very pale.

Peritoneal Cavity: The parietal and visceral peritoneum is smooth, moist and glistening. The omentum is spread over the intestines. The mesenteric lymph nodes are not enlarged. About 200 c.c. of clear, serous fluid is contained in the pelvic cavity.

Pleural Cavities: The left hemithorax contains about 100 c.c. of serosanguinous fluid, and a fibrinous exudate covers the lower portion. In the right pleural cavity is found an area about 13 inches in diameter, located at the lateral aspect of the lower lobe, which is entirely surrounded by dense fibrous adhesions that extend from visceral to parietal pleurae. The cavity so formed contains thick, yellow, foul-smelling, purulent fluid and communicates by an opening 1 cm. in diameter with a cavity in the lung.

Pericardial Cavity: The pericardial cavity contains about 35 c.c. of clear, greenish, watery fluid. Visceral and parietal pericardium is smooth, moist, glistening and free of adhesions.

Heart: The heart is of normal size and a pale brown color. The epicardium is smooth, moist and glistening. On section the myocardium is a mottled light brown color, and on pressure shows some friable areas. The endocardium is smooth and glistening and the valves show nothing of note.

Lungs: The left lung is crepitant in the upper lobe, but very firm in the lower. Several small discrete nodules are visible at the anterior border of the bases of both lobes. On section the lower lobe is found to be completely consolidated, yellowish-grey in color and thick, yellow, purulent fluid oozes from the cut bronchi. Considerable fibrous tissue is present throughout the entire lower lobe. The right lung is smaller than normal, but partially consolidated in lower lobe. On section two small abscesses about 1.5 cm. in diameter are found just beneath the surface at the anterior border of the upper lobe; a large abscess cavity is present in the lower lobe in the mid-axillary line about 3 cm. from the lung base. This cavity measures about 5x4x4 cm., is of irregular shape, and communicates laterally with

the empyema described above, through an opening 1 cm. in diameter. The cavity proper is partially divided into two portions by a thin partition, and contains thick, foul-smelling yellow pus and necrotic tissue. A zone of induration surrounds the abscess cavity.

Liver: The liver is firm in consistency, brown in color, mottled on its superior surface with irregular areas of a paler, almost yellow color. On section the parenchyma is yellowish-brown instead of the usual mahogany. A small area of the right lobe is of friable consistency, the balance of the organ firmer than normal. The gall-bladder contains dark-green bile and no stones are present.

Pancreas: The pancreas shows nothing of note.

Spleen: The spleen is of normal size, of deep slate color and of firm consistency. On section the pulp is dark purple, and scrapes easily.

Gastrointestinal Tract: The gastrointestinal tract shows nothing of note.

Kidneys: Both kidneys are redder than normal, the capsules strip easily. Cortex, medulla and pyramids are well demarcated. Slight hemorrhage is noted in the walls of the pelvis.

Bladder and Genital Organs: This portion of the genito-urinary tract shows no pathology.

Aorta: The intima is smooth, pink and glistening and no areas of dilatation are present.

Brain: The brain was not examined.

ANATOMICAL DIAGNOSIS:

Bilateral bronchopneumonia; multiple abscesses of right lung; encapsulated empyema (right side); pleural effusion (left side); toxic myocarditis; toxic nephritis; fatty degeneration of liver.

CONCLUSIONS

Reviewing the clinical symptoms, physical findings and roentgenograms with an autopsy report and history of the case we can arrive at the following conclusions:

1. The original illness began with a pleurisy and pneumonia which was followed by empyema.
2. That the child was well on the road to recovery from these two conditions when the pulmonary abscesses began to form which was some twenty days after admission.
3. That the abscesses ruptured both into the pleural cavity as was shown at autopsy by the circumscribed empyema, and into a bronchus as the foul expectoration indicated.
4. That this latter condition with its free drainage would have shown favorable results.
5. That death was ultimately caused by the multiple abscesses, small but generalized in both

lungs together with the pneumonia in left lung which three days before death was negative in the roentgen ray report.

6. That with such complex pathology in a lung we cannot depend too much on roentgen rays but must rely more on clinical symptoms, history of the case, and progress of the illness in arriving at a correct diagnosis.

MACRODUCTYLISM

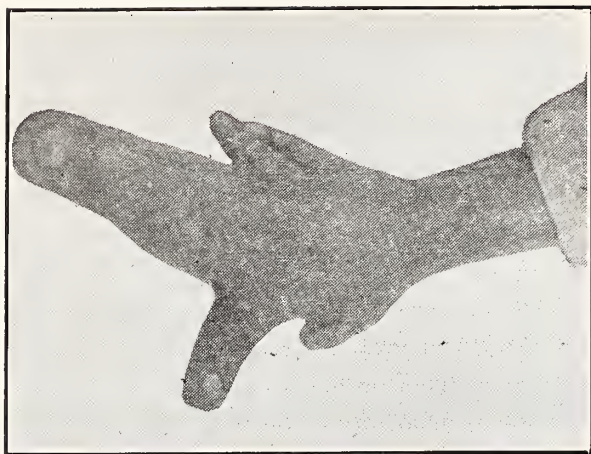
J. D. BLOOM, M. D.

NEW ORLEANS

It is said Virchow proposed to call local hypertrophies which are now and then met with, where a foot, hand, finger or toe are involved, "partial acromegaly." Certainly, this must seem erroneous as it may be misleading inasmuch as it should not be confounded with a disease as distinct as acromegaly. These enlargements either of toe, finger or extremity exist at birth, increasing in size more markedly at puberty and as a rule not accompanied by a general bony enlargement. They are of interest in that the condition shows no constitutional evidence of other tissue changes except a possible like condition of some other individual digit.

Macroductylism may be both congenital or acquired and measurably speaks for a trophic effect that is local and distinct in its cause. Congenital hypertrophy fairly conveys the nature of the enlarged member, which fetal life possibilities make likely and a disturbed local nutrition favors. A portion only of a finger involved favors such a view. Whilst the hypertrophy is manifest at birth, it is said that in some instances this was not apparent. It is progressive and a high degree of hypertrophy may be evidenced in children of immature years, as in the instance from which the accompanying photograph was taken of a child of seven years.

The cause can be attributed, apparently, to some idiopathy of development, the true nature of which seems to be unknown. It has been attributed to elephantiasis, but in this instance lymph obstruction by the filaria makes the difference a genuine one. Heredity seems to play no disposing part in its occurrence.



Appearance of hand before operation, showing the very marked macrodactylism.

The varying condition of the essential tissues of the member speak for a disturbed nutritive process impaired by an unknown cause.

Usefulness of the member is often interfered with by its size. The affected fingers have sometimes a like condition of the metacarpal portions involved in the hypertrophy. The enlargement involves both length and thickness. Of course, the overgrowth may be gigantic and from this results a useless member. It is stated, that in one instance, the hand weighed twelve pounds. The right hand middle and index fingers seem more frequently affected; in truth, the three radial digits being most commonly involved.

The treatment of this condition in its incipiency, would be the ligation of tributary arteries purposed to a diminution in supply of nutriment; unfortunately, this has not proved of avail. It is said that compression, too, offers little hope of results. Amputation is the measure more frequently required both to improve the usefulness and appearance of the hand, and it is said to prevent an extension of the hypertrophic process which is possible both to the parts remaining and as well the limb.

The accompanying photograph was taken from a case in which I amputated the enlarged member.

LOCAL USE OF QUININE IN OPHTHALMOLOGY*

G. W. ROBINSON, M. D. †

NEW ORLEANS

Quinine, an alkaloid derived from the bark of the cinchona tree, has at various intervals been in the limelight as a therapeutic agent for various and sundry disorders, from malaria to trachoma. Of late this drug has been brought forward once more, and this time through the channels of ocular therapeutics, and to date has made fair progress towards becoming one of the members of that group of drugs used locally in connection with ocular disease. Work on and with this drug is still in its experimental stage and it is in this connection that this paper is written, to record how it has been used by me and what results were obtained with its use.

Besides being an antipyretic and mild analgesic, quinine is an alkaloid that is both an astringent, bactericide, and a protoplasmic poison. The drug has in both past and recent experiments been shown to have the power of destroying leukocytes and lymphocytes, and that this effect on lymphocytes is most marked. Quinine, according to Cushny, acts on the nutrition of almost all forms of protoplasm bringing about, first, an increase in tissue activity, later depressing this activity below normal, and finally causing its death. Selinger showed in his work with the drug on trachomatous patients that a two to four per cent ointment or a solution up to ten per cent could be used locally in the eye without visible harm to the conjunctiva, cornea, or any of the ocular adnexa. He also showed, along with other investigators, that the alkaloid possessed a remarkable penetrating power when applied locally to mucous or lymphoid tissues. Their combined experiments have shown that the drug

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when applied locally to such tissues has no cumulative effect and in this respect toxic amblyopia and tinnitus do not occur.

As a protoplasmic poison, quinine while not harmful to the conjunctiva, cornea and ocular adnexa when used locally, by its action as such a poison inhibits the infiltration of the foregoing tissues by leukocytes, lymphocytes, and to a great extent by fibroblastic tissue. The latter has even been seen to become diminished in density when subjected to quinine therapy. This paper nor any of the foregoing papers intend to imply the idea that total abolition of any connective tissue present is possible with the use of quinine, nor do I intend to convey the idea that the drug will prevent the formation of all fibroblastic tissue, as at the present writing such a fact is believed impossible, but I do wish to bring out the belief that corneal opacities of various types can become partially cleared with its use, and that in all probability its use following ocular trauma in certain cases will inhibit excessive fibroblastic tissue formation and that its use here has a good rationale. That the quinine has an effect on the accumulation of lymphocytes and other abnormal cellular elements in the corneal stroma can be seen from the fact that the opacities are observed to change in density and that some of the older infiltrates disappear entirely only to return in milder form after therapy has been discontinued. One knows that once a corneal infiltration has developed it progressively becomes denser and so remains until finally absorbed. Such rapid changes in the character of infiltrates over a period of a few days can only be ascribed to the action of the alkaloid on the cellular elements composing the infiltration.

As stated by Selinger, "What the bactericidal action of quinine is on *Treponema pallida* in the corneal tissue cannot be stated at this time" but in a series of ten cases of interstitial keratitis, five of whom were receiving only the arsenicals and mercury, and the remainder quinine ointment of two per cent along with the routine antisyphilitic treatment at Charity Hospital in New Orleans, I can state that of these latter five cases, four cleared in one month while the other group not getting

quinine locally only three cleared, and then after three months, while the other two are still under treatment and have at this writing been placed on four per cent quinine bisulphate ointment and have begun to show signs, however slight, of clearing. Such cases alone would tend to show the action of the drug in cooperation with and without other well-known syphilitic remedies, as well as its powerful penetrating and protoplasmic poison activities in breaking syphilitic infiltration of the stroma.

Old corneal opacities resulting from trauma and sclerosing keratitis have been treated with two to four per cent quinine ointment and with a two per cent solution where treatment with ethylmorphine hydrochloride had failed. In the one case of sclerosing keratitis treated, both eyes had been treated with ethylmorphine hydrochloride to no avail. The left eye in this case was subjected to two per cent quinine bisulphate ointment twice daily and two per cent quinine bisulphate solutions as drops four times daily. Under such treatment visual acuity has returned from light perception to hand movements and the ability to distinguish form within three months. Whereas the eye treated with dionin, both in liquid and powder form, became very painful and congested following each treatment, the eye treated with quinine was painful only during the first two applications and from then on has caused no discomfort. Such a slight anesthesia induced by quinine is beneficial both physiologically and psychologically, and undoubtedly accounts for improvement seen in this case as well as the improvement seen in cases of interstitial keratitis; the physiologic action here is one of the absence of pain that would cause a dilation of the vessels thereby increasing the amount of cellular elements escaping from the vessels; the psychological element in play here is one having to do with fear and in particular the fear of the use of a drug causing pain such as dionin.

Quinine therapy in cases of corneal ulceration bears out the fact that the drug exerts an inhibitory power on abnormal hemic and tissue formation resulting in scars and infiltrations. Of six patients seen with corneal ulceration, quinine in two per cent ointment was used in four cases. In one of these a recent

extensive ulceration centrally located and with hypopyon, both of two weeks standing and with a visual acuity of 0.3, quinine bisulphate ointment was used twice daily. In five days desquamation of the ulcerated area set in and in eight days the margins were rounded off and the epithelium could be seen to have advanced out over the edges. Treatment was continued, and the area was covered with new epithelium within a period of three weeks with only a minimal amount of scar tissue present, although the stroma had been heavily involved. Visual acuity moved up from 0.3 to 0.7. The remaining three cases reacted similarly but to a milder degree. The latter cases were of long standing and had been cauterized with iodine previously.

It is probable that these cases would have cleared up to a certain extent under other forms of therapy, or even spontaneously, but the rapid improvement with such little discomfort under quinine therapy is worthy of mention.

Gradle, Lenzen and Selinger have used ten per cent quinine bisulphate solutions locally to the lids of trachomatous patients and have found a most gratifying improvement in the form of a decrease in the hyperemia and papillary and follicular hypertrophy after several weeks' use. They further state that in from four to six months most of their patients showed little evidence of papillary hypertrophy. In this connection I have used four per cent quinine bisulphate ointment in the treatment of papillary conjunctivitis and in all ten of the cases treated, hypertrophy ceased in four weeks, and in five weeks the condition had cleared up. One case of vernal catarrh also was treated with four per cent ointment together with an improvement of the patient's general hygienic surroundings and a well balanced diet. This case cleared within a month. It may be stated here that the case just mentioned had visited the clinic for the past two years and had been treated with zinc sulphate, dionin and had been referred to the allergy clinic without relief.

During the past six months I have used quinine in solutions and ointments in the treatment of cartarrhal conjunctivitis and have found its results most gratifying. In fifteen cases

so treated, the conjunctival infection decreased by one-half within two days, on the average. Exudates from such eyes examined microscopically after one week were found to be sterile. The average case cleared up in seven to ten days, and it may be stated that these were those occurring during the recent influenza outbreak in New Orleans. Most of the patients complained of the use of an ointment, so a solution of two per cent quinine bisulphate was used instead. In such cases the disease process was longer in being brought under control.

One patient with phlyctenular kerato-conjunctivitis was treated with both the two per cent ointment and the two per cent quinine bisulphate solution together with proper dietetics and hygiene. The eyes cleared without the trace of a scar. In all probability the condition would have cleared with proper diet and hygiene, but the absence of scars and the end of the process in one week is indeed gratifying and worthy of mention.

In connection with the McReynolds operation for the removal of a pterygium, I have employed the use of a two per cent quinine bisulphate ointment along with the use of atropine as a post-operative treatment in ten cases, and have found that scarring from such an operative procedure has apparently been greatly reduced when compared with the records of patients in whom such treatment had not been used. However, it may be said that such action may have taken place without the use of this drug but since its use was instituted, record of such results must be made here.

Similar results were observed in a number of post-operative cataract cases in which the intra-capsular method with a corneal suture was employed.

In cases treated and studied, a two per cent to four per cent ointment or a two per cent solution or both of quinine bisulphate was used. The bisulphate was selected for it is second in water solubility of the quinine group, and being less acid than most other quinine salts is also less irritating to the eye.

It should be remembered that quinine is incompatible with copper, lead, zinc, iodides, bromides, their compounds, tannic acid, alkalis,

ammonia and lime water. Supposedly incompatible to mercury, no such effects have been seen. Quinine acts synergistically with arsenic, iron and mineral acids.

Ethyl-hydroxycupreine (optochine; nemochin) is one of a number of alkaloids derived from the bark of the cinchona tree (Peruvian bark) that resembles quinine, but is endowed with less of the desired activity and with more of the undesired side effects (convulsant, Albertoni, 1882). This drug is one of a number of quinine alkaloids formed chemically as follows: Quinine is built of two rings, (1) quinoline; and (2) a piperidine derivative quinonucleidine; the quinoline ring bears a methoxyl group and the second ring a vinyl group; the replacement of these by other alkyl groups forms the derivatives and in this particular instance forms the type $\text{HO.C}_9\text{H}_5\text{N.CHOH.C}_7\text{H}_{13}\text{N.CH}_2\text{CH}_3$ known as hydrocupreine. The alkyl derivatives of hydrocupreine were found by Morgenroth to possess a high bactericidal efficiency, even in the presence of protein, and at the same time a relatively low toxicity to tissue cells. They were therefore proposed as tissue-antiseptics, both for local and systemic application. Experiments have shown that these derivatives tend to concentrate at the surface of solutions to such a degree as to form rather rigid films (Ramsden; Bayliss). Such films interfere with the condensation of other substances at the surface and therefore hinder catalytic processes, inorganic as well as organic. This results in decreased metabolism, and there is a tendency to precipitate proteins. Surface action is also shown by the arrest of Brownian movement. Such drugs seem therefore to produce anaphylactoid phenomena. The quinine film presumably diminishes the permeability of the cell leading to a narcotic effect such as seen on local application to nerves, muscles, and serous membranous tissues. Toxicity of this drug is relatively low probably due to the fact that it is largely bound and deposited in insoluble and harmless form.

Ethylhydrocupreine-optochine is especially toxic to pneumococci (Morgenroth and Halberstaedter). In vitro, the drug inhibits the growth of pneumococci with a concentration 1:800,000 in serum; it kills them with 1:400,000

(Wright 1912). Coehn, Kolmer and Heist in 1917 showed blood serum reduces the drug's bactericidal power in serum from one-fifth to one-tenth. Morgenroth in 1918 showed that the drug was more active in the whole blood rather than when the serum is separated and showed the cause of such action was due to the fact that the corpuscles take up a higher percentage of the drug. All strains of pneumococci and also streptococci are inhibited by concentrations of 1:100,000 yet some require concentrations of 1:10,000-5,000. Nachmann in 1915 and H. F. Moore in 1915 in different laboratories proved conclusively that optochine greatly increases the efficiency of anti-pneumococcus serum.

Morgenroth and Ginsberg in 1912 and 1913 proved that subsequent to the drug's first instillation into the conjunctiva a local analgesia persists for one-half hour and longer.

Bedell in 1920 showed optochine to be useful as an antiseptic, irritant and anesthetic in conjunctivitis of varied types and of high value in ulcer serpens cornea.

Optochine was introduced into my ophthalmic service at Charity Hospital one year ago. On its first trial the drug was used with caution in solutions of one-half to one per cent and only in cases of pneumococcal conjunctivitis that had been proved such with the microscope. During the past year some seventy-five to one hundred patients with this form of conjunctivitis were treated and in less than three per cent of these cases the drug did not halt the condition. Such cases were taken under careful questioning and it was learned that treatment had not been fully carried out at home, or that a secondary infection had developed.

Ten cases of hordeola, after removal of the dead hair and evacuation of the exudate, were placed on one-half per cent optochine to be used thrice daily and in no case was there any sign of conjunctivitis seen at any time.

Acute catarrhal conjunctivitis and acute pneumococcal conjunctivitis seen so frequently in the out-patient clinic and wards during the recent local influenza epidemic were perhaps the two outstanding conditions subjected to optochine treatment in one-half to one per cent

solutions. In eighty-five per cent of such cases the condition cleared under this treatment above; in the remaining fifteen per cent hot compresses, ammoniated mercury of three per cent and weak zinc sulphate solutions were used as supplementary treatment. However, all cleared eventually.

I have been extremely fortunate in having the opportunity of treating three serpent ulcers of the cornea with this drug. In two of these cases two per cent optochine was the only antiseptic drug used. Both cleared with its use in conjunction with the use of hot compresses and atropine. The third case is still under treatment. Though cauterized with the actual cautery little progress seemed to have been gained so the local use of optochine one per cent and quinine bisulphate ointment two per cent was instituted with the result that the ulcerated area has almost healed and with a minimal amount of scar tissue. At the present rate of healing the patient will leave the hospital within two weeks, having been hospitalized by that time a total of four weeks. Smears from this eye show no sign of any micro-organism present.

The drug has been used in the treatment of disciform keratitis in five cases. In only one of these has it proved of definite value in treating such cases now believed to be caused by a peculiar type of pneumococcus that can and does survive only in the deeper layers of the corneal stroma. In combining quinine bisulphate ointment of two per cent with optochine two per cent, the other cases showed a halting of the pathologic process but neither clearing nor eradication of the disease ever took place.

I have attended one case of abscess of the conjunctiva of five days' standing. The abscess was brought to a head with hot compresses, then incised, then drainage established. A two per cent solution of optochine was used every four hours. The process cleared and at no time was the conjunctiva further affected.

Having seen the real antiseptic properties as well as the analgesic properties of optochine in clinic and wards, its use was instituted as a routine post-operative procedure in the dress-

ing of all eyes having been surgically traumatized. In 150 cases so used post-operative complications developed in ten cases. Seven of these latter were negro patients, two were oyster fishermen living in the low marsh-lands and one was a young child. It would seem from these statistics that ignorance of their condition and their natural lack of cleanliness apparently accounts for the complications that developed, for in all cases improper use of the drug was in evidence.

In the cases studied and treated a solution of one-half to two per cent of optochine was used. As a general ocular antiseptic and analgesic, optochine one-half per cent is of definite value in ocular conditions in that it has an almost specific action on all types of the commoner pneumococci, and to a less extent on such organisms as streptococci and staphylococci as well as some definite effect on other organisms such as influenza bacillus, the Koch-Weeks bacillus and some effect on the filterable viruses causing catarrhal conjunctivitis as seen in epidemics. I have found its use most helpful as a drug to use on post-operative cases. I believe it to be of value in preventing conjunctival infections.

It should be remembered that strong solutions of the drug can cause ocular disorders, hence only such solutions as mentioned should be used and in this connection I can well state that a solution not exceeding one per cent can be used over exceedingly long periods of time without causing injury. Supposedly incompatible with such drugs as mercury and iodides, no such reactions have been observed in any of the cases studied and I sincerely doubt that such an incompatibility exists for there have been no such cases reported and since it is hardly more than absorbed there is ample room to dispell fear of injury from incompatibility. The fact that it acts synergistically with quinine should be well borne in mind.

SUMMARY AND CONCLUSION

Locally, quinine has been shown to be an astringent, a bactericide and an anesthetic to mucous membranes. It is a definite protoplasmic poison that, when applied locally, possesses the power of deep penetration of the tissues and will destroy leukocytes, lymphocytes

and other cellular elements and has the power of inhibiting scar tissue formation. Quinine bisulphate has been shown to be of value in the treatment of interstitial keratitis, trachoma and of both old and recent corneal opacities. It has been used in cases of vernal catarrh, phlyctenular kerato-conjunctivitis and corneal ulceration of several types beneficially.

Ethyl-hydroxycupreine (optochine) is one of a number of alkaloids formed from the replacement of one of the two chemical rings composing quinine by an alkyl group. It resembles quinine in its reactions but is less active. As a protoplasmic poison it is weaker than quinine. It is known to possess a high bactericidal efficiency even in the presence of protein, yet a relatively low toxicity to tissue cells. Its action seems to be that of a tissue antiseptic and bactericide due to the fact that it concentrates on the surface in solution to such an extent that a rigid film is formed and such a film interfering with the condensation of other substances at the surface hinders catalytic processes, both organic and inorganic, resulting in a decreased metabolism and causing a precipitation of proteins. The film further diminishes cell permeability leading to a narcotic effect as seen on local application to nerve, muscle and serous membranes. It is especially toxic, almost specifically so to all types of pneumococci and also to streptococci and staphylococci. As a general ocular antiseptic and analgesic it is of a very definite value in the clinic, ward and as a post-operative preparation to be used in combatting the invasion of the eye or the wound with an infectious agent. It apparently has a definite value in the treatment of the Koch-Weeks bacillus, the Pfeiffer bacillus, and some of the virus infections which cause catarrhal conjunctivitis. That optochine and mercury or the iodides are incompatible, I cannot at this time believe, due to the lack of such case reports bearing this out and to the fact that none of the cases under my supervision have to date suffered any such ill effects. To the contrary, my small study would tend to show that both quinine and optochine can be used in conjunction with mercury and the iodides.

Although optochine and quinine as ocular

therapeutic agents are still in their experimental stage, I can, with sincerity, state that both drugs are highly beneficial in their effects on infectious micro-organisms of the conjunctiva, the repair of ocular adnexa, and that they act synergistically with one another, and are not hampered by the use of their supposed antagonistic drugs such as mercury, iodides, bromides, lead, zinc, copper and ammonia, and that both drugs may be combined over long periods of time without producing injury to any of the ocular adnexa.

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DISCUSSION

Dr. Chas. A. Bahn (New Orleans): The popularity of drugs like many other things in life moves in cycles. We are now in a cycle of increasing interest in the applications of quinine. Dr. Robinson, with Selinger and others, is bringing to our attention that quinine has been neglected in ophthalmic therapy. They are finding new uses for our old friend cinchona. After all, many of our ultra-modern remedies represent old truths dressed in new clothes.

In ophthalmology, quinine as an installation anesthetic is rather inefficient. Its high pH makes it somewhat painful in effective strengths, when applied locally, unless buffer solutions are used. In pneumococcal affections of the cornea and conjunctiva its virtue has been attributed to its relative acidity rather than to bactericidal power.

To its action as an astringent is partly attributable its use in clearing corneal opacities, by temporarily at least dehydrating corneal infiltrations. Its sclerosing action which has made quinine a valuable adjunct in the treatment of hemorrhoids, has also found its application in ophthalmology. Here, it has been used in the injection treatment of vascular lid tumors. This same sclerosing power also is responsible for its experimental use in the treatment of corneal opacities.

As a parasiticide its uses are many and varied. Generally speaking, it is more lethal to animal than vegetable cells. In ophthalmology, we have

adapted its application from the gynecologists who first employed it to kill spermatozoa in the vagina.

A generation ago, we were taught that all bacteria belong to the vegetable kingdom. Today we are not so sure. This is of especial interest in the local antiseptic treatment of conjunctival and corneal infections. Antiseptics directed against vegetable parasites are generally speaking not the same used against animal parasites in the eye as well as elsewhere in the body. Just why the pneumococcus should be more easily killed by quinine than other bacteria is not known. Possibly, the high pH of quinine and its allied alkaloids prepare the soil for its antiseptic actions specially against the pneumococcus. Quinine is being experimentally used in the virus diseases of the conjunctiva and cornea which include at least some of the herpetiform infections. Whether or not the filtrable viruses belong to the vegetable or animal kingdom is not known. The recent use of quinine in trachoma may help solve this problem.

Of the two forms of quinine used locally in ophthalmology, the bisulphate and optochin or neumochin, there seems to be but little therapeutic difference. Neumochin is the recent name given to ethyl-hydrocupreine, a quinine alkaloid previously marketed as optochin, a German trade name. Neumochin was developed in the treatment of pneumonia, because other quinine salts were frequently followed by undesirable symptoms. The frequency of pneumococcus conjunctivitis, ulcerative keratitis, and dacryo-cystitis is partly responsible for the importance of quinine installation therapy in ophthalmology. Neumochin is used locally in the conjunctiva in strengths of one half to one per cent and locally supplied in a two per cent solution. Quinine bisulphate is used in a four per cent ointment and in solutions as strong as ten per cent, locally applied.

I have watched with interest the experiments which Dr. Robinson has made with quinine in my clinic. I have used optochin in at least five hundred patients with the pneumococcal conjunctivitis and herpetiform keratitis mentioned above. My use of quinine bisulphate locally has been somewhat more limited. Its advantage in my opinion lies principally in the fact that it is cheaper and more easily obtained.

In conclusion, I wish to leave with you the thought that quinine is among the major local antiseptics in ophthalmology and also that its intelligent experimentation should continue for new fields of ophthalmic usefulness.

LATERAL PYELOGRAM AS AN AID IN THE DIAGNOSIS OF PERINEPHRITIC ABSCESS*

PRELIMINARY REPORT

JOHN G. MENVILLE, M. D.†
NEW ORLEANS

The roentgen ray has proved itself a valuable aid in the diagnosis of certain diseases of the genito-urinary tract. To some extent it has been of aid by means of plain roentgen ray films in the diagnosis of perinephritic abscess. This condition is at times difficult to diagnose by the methods ordinarily used and is often mistaken for other conditions. Appreciating that perinephritic abscess has a high

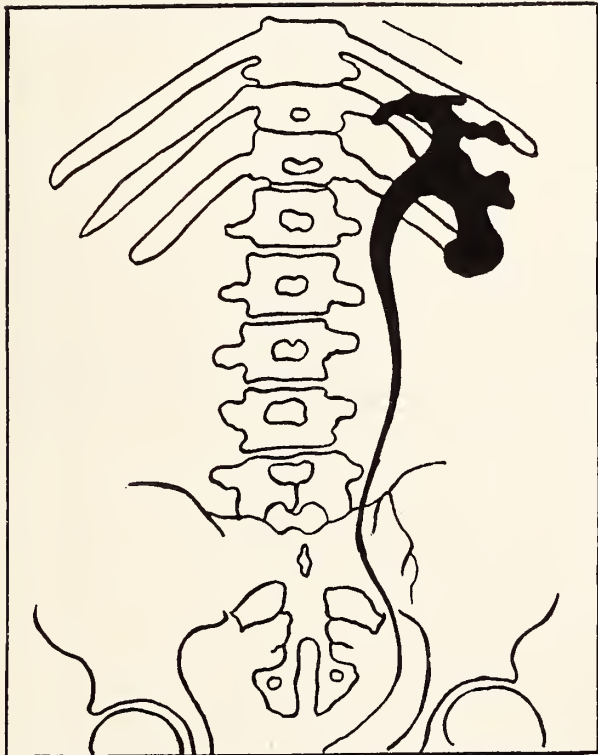


Figure I: A-P view of a left preoperative pyelogram in a case of a perinephritic abscess showing an enlarged pyelographic shadow with a compression of the upper calyx. The spine shows a curvature with the concavity pointing to the left side.

mortality rate, any additional aid in the diagnosis of this condition should prove of some importance.

*Read before the Orleans Parish Medical Society, June 14, 1937.

†From the Urological Division of the Department of Surgery, Tulane University School of Medicine.

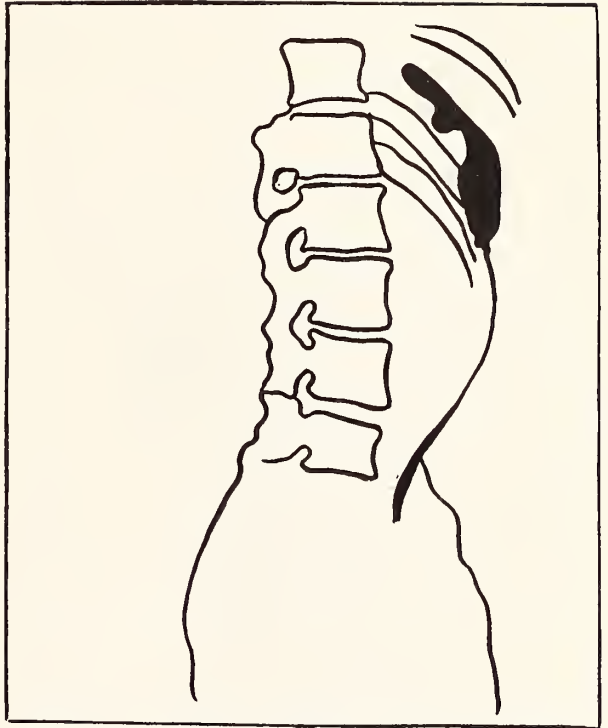


Figure II: A lateral pyelogram of the case shown in Figure I, presenting a marked anterior displacement of the kidney and an elongated, regular, smooth, arc-like anterior displacement of the ureter.

Recently it was my good fortune to make a certain observation on a patient with a perinephritic abscess upon whom a lateral pyelogram was made. This patient was clinically suspected of having a perinephritic abscess and this was confirmed by operation. The lateral pyelogram of this case disclosed the kidney and ureter to be displaced anteriorly in an elongated regular, smooth, arc-like fashion. In addition, it was noted that the ureter was more markedly displaced than the kidney. Four months after operation another lateral pyelogram was made and the roentgen ray films revealed the kidney and ureter to be in a normal position.

Lateral pyelograms often have been made for different pathologic conditions of the kidney and also in retroperitoneal lesions in which the kidney and ureter were displaced anteriorly, but in such cases the shadows observed in the pyelogram are not of the smooth, elongated, arc-like anterior displacement of the kidney and ureter as was found in the case herein reported.

The report of what is believed to be a new diagnostic procedure in a single case is prob-

ably insufficient to be considered of unusual value as an aid in the diagnosis of perinephritic abscess; nevertheless, the fact that a lateral pyelogram showed the kidney and ureter to be

in their normal position, following a drainage of pus from the perinephritic space, convinces me that this observation is worthy of being reported.

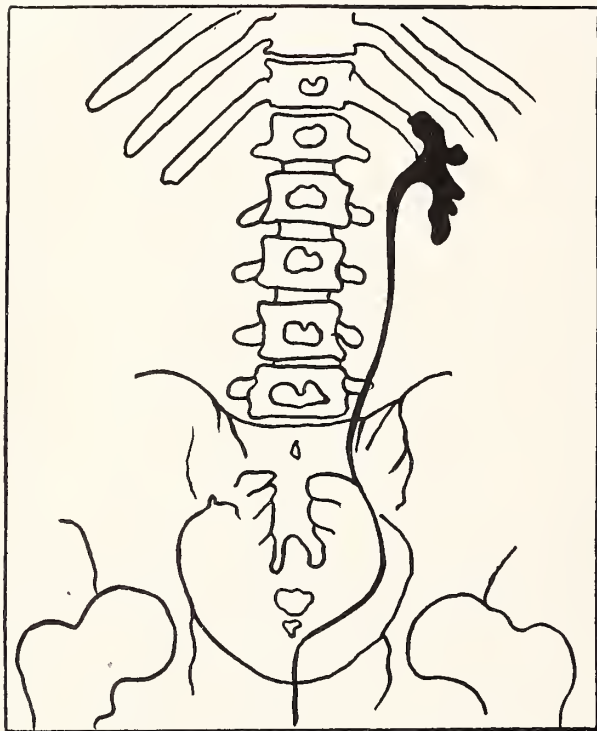


Figure III: A-P view of a left pyelogram taken on the same patient presented in Figures I and II, but four months after operation, showing the pelvis to be of normal size and shape. The spine is in a normal straight line. Compare with Figure I.

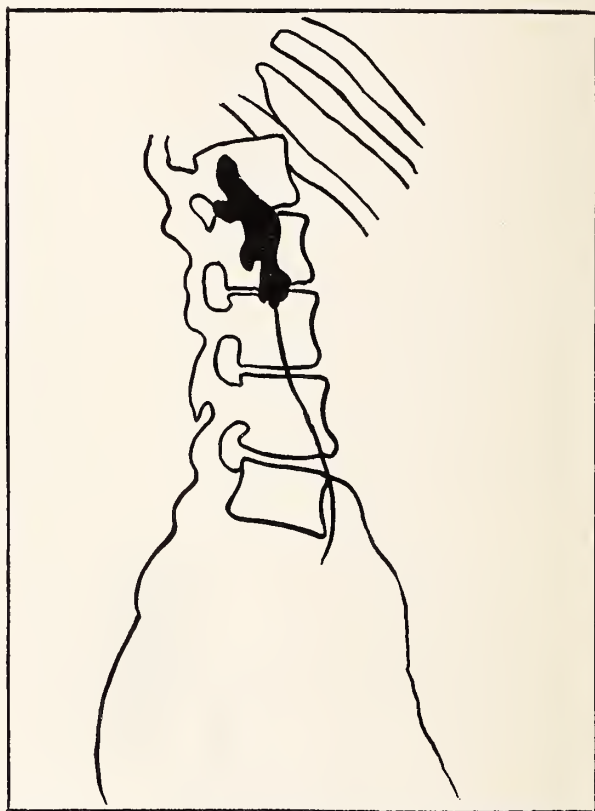


Figure IV: A lateral pyelogram of the patient shown in Figures I and II taken four months after operation, showing the kidney and ureter to be in normal position. Compare with Figure II.

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MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The recent meeting of the A.M.A. at Atlantic City probably exceeded all other meetings from the point of view of attendance. Approximately there were over 10,000 doctors registered and several thousand members of doctors' families. This makes for a perfectly huge convocation, so big as a matter of fact that there are extremely few cities in this country

that can take care of such a large crowd gotten together at one time for a period of a few days.

The very large number of attendants at this meeting showed that the gatherings in the past have been well worth while and that the men get a great deal out of them. Undoubtedly this year the same can be said as of the past meetings. Almost to a superlative degree this 1937 gathering presented a splendid program in an unexcelled manner. The huge auditorium at Atlantic City was filled with commercial and scientific exhibits. The former displayed all the newest food preparations, drugs, books and technical apparatus of legitimate makers of such. The scientific exhibit was extremely complete. The trip to Atlantic City would be well worth while merely to see the scientific presentations alone. However, the programs of the various sections were, for the most part, splendid. The papers were original, scientific and practical. Altogether the men who attended this annual convocation of the A.M.A. obtained in a concentrated form an immense amount of information. It should be the business of every doctor who can possibly do so to attend the A.M.A. meeting.

The South was well represented at the meeting. Louisiana doctors took an active part in the scientific program and in the exhibits. There was really an excellent attendance from Louisiana considering the long trip necessary to get to the Jersey coast. There were 47 Louisiana doctors in attendance.

The Association selected as their president-elect a Southern physician, Dr. Irvin Abell of Louisville, Kentucky, a man who has held practically all of the high honorary positions to which he is eligible in Southern associations and societies, indicative of his popularity and his worth.

BEFORE AND AFTER FORTY

Under this attractive title Dr. Charles H. Mayo has written a valuable and interesting article for the laity, appearing in *Rotarian* of June. In this article he points out what preventive medicine has done for man. Such articles are of great value, they instruct the laity

in a sane, sensible manner and they also make people realize how much medicine is responsible for the longevity and good health of the present day generation.

It is not only because of the value of presenting information to the lay world but it is also because of Dr. Mayo's firm stand in regard to periodic physical examinations for the apparently well individual, that this paper stands out. He states that "some physicians and many of the laity scoff at periodic physical examinations." He points out that people go to the doctor if they have a pain or think anything is wrong but frequently they are not cognizant of any physical disturbance, or neglect it, with the consequence that early disease is neglected until no longer amenable to treatment or at least difficult to cure. He stresses the importance of these examinations and insists upon thoroughness of the examination. Probably one of the reasons that the population as a whole does not have a routine yearly physical examination is the fault of the doctor. He takes the pulse and blood pressure, listens to the heart, does maybe one or two other simple procedures and then gives the patient a clean bill of health. This examination should be made regularly, it should be thorough, complete and full. The patient's sensations should be analyzed fully and carefully at the time of the examination. How valuable it is in determining cardiac deficiency, to obtain the history of shortness of breath on slight exertion; how extremely important is it to know of discharges or bleeding from any of the body orifices; how absolutely essential is it to have information on many other similar disease expressions.

The periodic physical examination is important but there should be not only complete examination of the whole body but also there should be a careful history with meticulous attention to the patient's habits of life and a thorough going into the way of living. An examination such as this would make the occasional lay individual cease scoffing at the examination and would be of valuable assistance to them in maintaining good health.

PREVENTING ACUTE INTESTINAL OBSTRUCTION

In a recent number of an excellent new surgical publication, "Surgery", there appears a provocative article by Morris and Johnson* on hernia as an etiologic factor in acute intestinal obstruction. Their survey is based on an analysis of 130 patients with hernia who developed intestinal obstruction. These patients came from some of the surgical divisions of the Bellevue Hospital. In a period of 14 years there were 52,351 surgical cases admitted to the services and of which 3,432 were classified as hernias of various types. In analyzing the statistics it is interesting to note that of 130 cases of hernia with acute intestinal obstruction the highest incidence was in the first ten years of life, 16 per cent of cases. Subsequently there was a drop in the second decade of life with a gradual rise in the sixth decade when 23 per cent of patients developed their obstruction. The incidence in the male babies was very high and female babies low. As a matter of fact acute intestinal obstruction as result of hernia was of no significance until the fourth or fifth decade of a female's life when its frequency was about that of the male. Another interesting statistical observation is that 4 per cent of hernias are at some time or another complicated by obstruction and that this 4 per cent represents 54 per cent of all cases of intestinal obstruction from any cause.

The majority of cases of obstruction were due to external hernia but internal hernia, a comparatively rare condition, is very much more likely to cause obstruction, that is in terms of per cent of such cases, than is the external hernia. The unfortunate fact about the internal hernia when obstruction takes place is that it is clinically silent until complications take place and then it is impossible in most instances to carry out the principles of treatment of external hernia, reduction of hernial contents and obliteration of the sac.

The authors comment briefly on the symptoms of hernia obstruction; they do accentuate rather forcibly the significance of the condition

*Morris, J. H., and Johnson, V. S.: Hernia as an etiologic factor in acute intestinal obstruction, *Surgery*, 1:903, 1937.

called shock and most notably observed in older patients. In three instances, incidentally, shock was so far advanced nothing could be done operatively for the patients and amongst the 38 deaths which happened in patients operated upon, 39 per cent were due to shock. This observation is of considerable importance because from the study of the statistics the authors think that operation should be delayed in advanced cases complicated by shock until this factor can be eliminated. On the other hand, the early obstructive cases "are the logical operative emergencies". If the patient is in shock, of course the first indication is restoration of fluids and naturally whole blood best meets the indications. Unfortunately glucose and saline solution or normal salt solution are of secondary value because their effect is short-lived, and for this reason should be given in very large amounts by slow intravenous drip.

The subsequent treatment is the release of the obstruction which of course is the primary objective for surgical procedure.

Although the interesting information which has been briefly accounted in the above paragraphs is of great value, probably the most important features of this paper are the statements: first, that relatively and absolutely, hernia is the most important amongst all causes of acute intestinal obstruction and second, an obvious corollary, that prophylactic herniotomy is advisable in all patients with hernia. As the authors say, this operation is a small price to pay for insurance against the possibility of intestinal obstruction with its attendant dangers which may culminate in death. Surely this point should be stressed and emphasized to all prospective candidates for the relief of hernia. An operation should not be unnecessarily postponed and should not be neglected interminably.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

GRADUATE SCHOOL
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NEW ORLEANS

The scientific meeting of June, 1937, was called by Doctor J. T. Nix, Director of the Graduate School. Doctor E. von Haam presented the following paper:

PREDISPOSITION TO CANCER

According to Lubarsch, predisposition towards a disease is a particular condition of organisms which makes them susceptible to the effect of injurious influences. Our reaction towards these injurious factors, external or internal in nature, is dependent upon the constitution of the organism, a condition principally determined by inherited characteristics and their variations during the evolutionary stage (Pende). Opinions regarding the importance of a predisposition to cancer in the human race are sharply divided. While some authors, e.g., Willy Meyer, believe that there is an inherited or acquired cancer susceptibility in every case of malignant growth, Lewin and others warn against an over-estimation of the constitutional basis as long as our knowledge of irritating factors is still so limited. A study of our vital statistics demonstrates clearly that race, age and certain living conditions seem to have definite influences upon the occurrence of cancer

in families. Cancer amongst the American Indians, the negroes and the uncivilized population of Africa is unquestionably rarer than it is amongst the white race. Italy is less afflicted by the disease than England and Switzerland. The prevalence of malignant tumors in the age groups between 50 and 70 is a well known fact. While this could be simply explained by the time factor, a seemingly necessary requisite for the development of a malignant growth, examination of Freund and Kaminer and his school seems to demonstrate a difference in the proteolytic activity of the serum of old and young persons, which may be the constitutional factor involved. The lip cancer of pipe smokers, the skin cancer of Kashmir, the bladder tumors of chimney sweepers and aniline workers are well known in the literature and always cited in favor of the theory that cancer is caused by local irritants such as tobacco juices, heat or aniline dyes. However, the fact that only a small percentage of all persons exposed to these aforementioned irritants contract cancer while the vast majority (about 90 per cent) remain free of a malignant growth speaks strongly in favor of the presence of an endogenous factor which predisposes some people to the development of a malignant growth. Even more convincing evidences of the presence of such a "predisposing factor" are those cases in which, presum-

ably, a single act of trauma, such as a blow to the breast, precipitated cancer. The importance of heredity in cancer is illustrated by the existence of numerous so-called families in whom not only the development of cancer is hereditary, but also in whom cancer develops in identical locations and has similar histopathological types. The question of simple familial coincidence in these cases must be excluded on the basis of the rules of probabilities. These and numerous other examples from the statistics on cancer demonstrate with increasing conviction that a predisposition to cancer actually exists and must be counted as an important internal factor in the etiology of this disease.

Chronic local irritation, once thought to be the chief cause of cancer, has become less important since we know that, experimentally, cancer may be produced in some animals with any of these "local irritants" and that there is no specific correlation between the cancerogenic agent and the type and frequency of tumors produced. The inflammatory lesions produced by these irritating factors may or may not develop into cancer and the term "precancerous lesions" will mean nothing unless we know whether this person is predisposed to cancer or not. In some persons any area showing some cellular destruction with inflammatory reaction may present a precancerous lesion, while in others, the same type of lesion will never produce a malignant growth. Therefore, the first step that must necessarily be taken for the successful prevention of cancer must be the recognition of this precancerous state of the cancer-disposed patient. We are not able to do this at the present time.

Neither biochemical nor immunological examinations on normal persons or persons belonging to cancer families have revealed anything which may be taken as the expression of a cancer disposition. My own extensive investigations on over 500 relatives of cancer patients have been fruitless in this respect. Most of the so-called "cancer reactions" such as the Roffo reaction or the Freund and Kaminer reaction are probably caused by the metabolic effects of an already established malignant growth and not by the cancerous constitution of the individual. The same can be said concerning most of the biochemical changes found in cancer patients such as the shift of the calcium-potassium quotient in the serum, changes in the blood sugar level, the content of lactic acid and the hydrogen ion concentration of the blood. None of these changes are consistent and none indicates an existing predisposition for cancer.

The methods of constitutional medicine as practised by Draper and others seem to me to offer a more promising solution of this problem than any other single method. The correlation of vari-

ous methods of examination such as are practised by this school is an excellent means of discovering new facts and of avoiding errors which the use of a single method of examination would inevitably produce. Determination of the endocrine formula, anthropometric measurements, pharmacodynamic and even psychological tests should be tried since biochemical and serological methods have failed and whether they are successful or not, they are certainly worthy of trial.

SUMMARY

Analysis of cancer statistics demonstrates the existence of an individual predisposition towards cancer. The exact nature of this disposition is unknown except that it seems to follow certain hereditary laws. Our present methods of studying the problem of our disposition to cancer have failed and it is suggested that the methods of constitutional medicine may offer a better solution of the problem.

SOUTHERN BAPTIST HOSPITAL

The last staff meeting until the fall was held at Southern Baptist Hospital on Tuesday, June 22, 1937 at 8 p. m.

The scientific program consisted of two papers: 1. "Diagnosis and Management Occiput Posterior" by Dr. E. L. King; 2. "Indications and Contraindications for Tubal Insufflation" by Dr. H. B. Alsobrook.

Following the presentation of these papers, the monthly death report was read.

HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Urology, Dr. Edgar Burns presiding.

General Discussion of Urinary Infections (Dr. Edgar Burns, Department of Urology): The management of patients with an infected urine is related inseparably to the procedure of study and examination. The usual preliminary routine will give good presumptive evidence of the location and type of infection, and if it is acute, will determine usually the indication or contraindication to the use of instruments. An effort should be made to determine as early as possible the clinical class of the infection, for once infection has been classified properly the procedure of treatment becomes fairly clear even though the result is not always satisfactory.

Many different organisms are found but the majority of cases are due to colon bacilli, either *escherichia* or *aerobacter aerogenes*. Other organisms are *bacillus pyocyaneus*, *staphylococcus*, *streptococcus* and *bacillus proteus*. Fortunately, the colon infections most commonly found are the ones most easily eradicated. On the other hand the organisms that split urea, of which *proteus* is the chief offender, are most resistant to

treatment. This type of infection leads to very early stone formation and rapid destruction of renal tissue, hence the importance of early recognition and eradication of this group.

In any discussion of urinary infection, the part played by stasis in the urinary tract and foci of infection should be emphasized. Stasis may be produced by stricture of the urethra, prostatic hypertrophy, cord or paralyzed bladder, diverticulum, stone, ureteral stricture and hydronephrosis. It is absolutely impossible to make any impression upon infection until stasis is eliminated. For that reason the first step is the use of whatever methods are indicated to remove any of the above found to be present. Foci of infection may not prevent the urinary tract from being cleared of infection but the story is that of repeated recurrences. Infection in the teeth, tonsils, sinuses, prostate and seminal vesicles in the male, cervix in the female, gut, and so on, should be looked for and removed when found, in an effort to obtain a permanent cure.

TREATMENT

Internal medication is a popular method of treatment in spite of the fact that results are almost wholly unsatisfactory and unreliable. Drugs administered by mouth or intravenously, ultimately reach the kidneys to be excreted into the system of urinary tubules and reservoirs before being passed out of the body. The normal renal pelvis has been shown to empty itself in three to five minutes and the passage of the urine along the ureters occurs in a series of very rapid movements. It is a usual clinical experience to find that in the presence of acute infection the emptying of the pelvis and calices is still more rapid, the normal capacity reduced and the walls of the cavity in a hypertonic state. It would seem therefore that the sterilizing effort of any drug must be inefficient because of the short period of time that it remains in the renal pelvis. In the bladder, however, a certain degree of stasis is normally present, and here more can be expected of substances introduced into the urinary system. (Hinman)

The bewildering number of urinary antiseptics on the market today is sufficient evidence that none has been found to be entirely satisfactory. A few of these, however, seem worthy of more or less consideration.

Urotropin has been used for 40 years. At first it was believed to possess antiseptic powers in itself but this was soon disproved and its activity shown to depend upon its hydrolysis to formaldehyde in the presence of an acid solution.

"Hinman determined the antiseptic and disinfectant power of formaldehyde itself for bacteria. He used the colon bacillus, streptococcus aureus and staphylococcus albus, and found that to kill

them in 20 minutes a high concentration of 1 in 200 to 300 was needed. The same organisms were prevented from growing during a period of 48 hours by strengths of from 1 in 30,000 to 50,000. He further examined the amount of formaldehyde appearing in urine of patients receiving 45 grains of urotropin daily by mouth. In specimens of urine obtained by direct catheterization of the kidneys a concentration of 1 to 60,000 was attained in five only out of twenty-three cases. Out of a total of 318 examinations he found a definitely germicidal strength of formaldehyde in 5 per cent only and an antiseptic strength in 17 per cent. He draws attention again to many of the limitations of the use of urotropin, as in pyelitis, the short period of time the urine remains in the kidney area, and similarly in cystitis, the frequency of urination reducing the time for the hydrolytic process to take place." It is probably most effective when given in large doses, 60 to 120 grains daily, and supported by some drug to acidify the urine. Ammonium chloride can be obtained in $7\frac{1}{2}$ grain enteric coated tablets and has been found satisfactory for this purpose when given in amounts of 45 to 60 grains daily. Occasionally, the urotropin may upset the stomach and in such cases may be given intravenously. Fruit juices and alkalis should be eliminated from the diet as they reduce the acidity and may actually render the urine alkaline.

According to the work of Davis and Sharp, acriflavine is antiseptic to the colon bacillus and staphylococcus. They used 0.2 gram doses and apparently it is best given in capsules as no results were obtained when shellac coated pills were prescribed. It requires the presence of an alkaline urine.

Methylene blue is an old remedy which has received but scant attention for many years. A few recent articles point out that the dye is as good, if not better, in inhibiting bacterial growth in the urinary tract than any of the drugs that color the urine.

Pyridium has been strongly supported by some of the American urologists and an occasional good result is most likely obtained from its use. Critical investigators, however, state that it is practically inert and only colors the urine. It is my feeling that patients with distressing bladder symptoms, especially those with acute gonorrheal posterior urethritis, are made more comfortable by it.

Hexylresorcinol may sometimes be of value in the treatment of alkaline infection. It requires a limited fluid intake for efficiency.

Good results have been reported from the use of mercurochrome. It may be given by mouth in the form of enteric coated pills, may be injected intravenously or used locally as an antiseptic ir-

rigation of the urinary tract. When used intravenously, the dose should not exceed 10 c. c. of a 1 per cent solution. Mercurochrome should not be used in the presence of severe kidney damage.

Neosalvarsan is almost specific in some of the coccal infections and rarely may be of benefit in bacillary types. It is used in very much the same manner as in treating syphilis, the same precautions in regard to renal function being observed. Just why it acts as a urinary antiseptic is not entirely clear.

Crance and Maloney claim good results from nitrohydrochloric acid. They believe that a strongly acid urine is bactericidal to colon bacilli. I have used the drug in a fair number of cases during the past 18 months and am unable to report a single cure.

The ketogenic diet as advocated by Helmholtz and Clark may be regarded as a definite therapeutic triumph. The production of ketonuria pH 5.2 or below renders the urine unquestionably bactericidal. The diet contains a minimum of carbohydrates, a small quantity of protein, and a maximum amount of fats. The most simple way of administration is to give two eggs and one-half pint of whipping cream for each meal, nothing else. This should be continued for more than one week. The patients often complain of nausea, weakness, shortness of breath and pain in the back and legs, and if too disagreeable, it may have to be stopped. Cures in 75 per cent of cases are reported from some quarters. In our own work over a period of two and a half years, slightly more than 50 per cent have remained well.

Through the work of Rosenheim, mandelic acid has recently appeared as a urinary antiseptic. It was long known to be excreted unaltered by the kidneys but only recently proved to be relatively non-toxic. Clinical trials have shown it to be a simple and efficient remedy in chronic urinary infections uncomplicated by obstruction. Successful cases have mostly started to improve after a few days on the drug and the urine has usually become sterile in 10 to 21 days. Fluids are restricted to insure sufficient concentration of the acid in the urine. Ammonium chloride may be added in appropriate doses to bring about the desired pH value. Frequent examination of the urine for albumin and casts should be made as the drug is slightly irritating to the kidneys. Citrus fruits, alkalis, spinach, olives, beans and molasses should be eliminated from the diet as they tend towards the production of an alkaline urine. Cures are reported in about the same number as from the ketogenic diet, but mandelic acid has the advantage of being more simple and much easier to take.

In prescribing urinary antiseptics it must be remembered that a renal function within reasonable limits of normal is essential. Kidneys that

are unable to concentrate urine are likewise incapable of concentrating drugs in sufficient amount to kill infection. It should be remembered also that all patients and all infections do not react in the same manner and that in changing from one drug to another, one may be found that will produce a good result.

If satisfactory improvement is not obtained in a reasonable period from rest, fluids and urinary antiseptics, one should resort to local treatment if the best results are to be had. Cystoscopy with lavage of the renal pelvis with one-half per cent silver nitrate is often found to shorten the course of the disease. It is our custom in severe cases with chills and fever to leave indwelling catheters in place until the acute symptoms have subsided. In this way, irrigation of the renal pelvis may be done one or two times daily as indicated.

Eighty-five per cent of urinary infections can be cured by one method or another. The other 15 per cent can usually be cured from the patient's standpoint, for they are not incapacitated and feel well, but from a scientific standpoint they are not well because the urine still shows organisms.

Brief Report on Use of New Urinary Antiseptics in Hutchinson Memorial Clinic (Dr. W. E. Kittredge, Department of Urology): I wish to report on the use of mandelic acid in this clinic. I have gone over 12 completed cases in which this drug has been used and find that nine have been cured and three have been failures. Our criteria of cure are: three negative smears of the urinary sediment and a negative culture whenever it is possible to obtain one.

The organisms involved in these 12 cases were as follows: Nine were pure colon bacillus infections; one was an alkaline proteus bacillus infection; one was a mixed staphylococcus and colon bacillus infection, and one was a colon bacillus bacilluria, which means that the urine contained large numbers of the bacilli with almost no pus cells. The cause of this last condition is usually some obscure or chronic focus of infection, very hard to reach or eradicate either mechanically or by the use of oral antiseptics. I may say further that these three failures had been tried on every other known form of treatment, and that we had entertained little hope of cure even before treatment was begun.

Perhaps it would be of interest to describe our technic in the administration of this drug. The drug used in this department has been the elixir of mandelic acid. Two other preparations have been tried, but this elixir has been found to be the most satisfactory. It is prescribed in quantities of from 8 to 16 ounces, usually beginning with a small amount in order to determine first whether or not the patients will tolerate the drug.

If they do not tolerate it, then they will not have bought a large quantity of useless medicine. The drug is expensive, costing at present in the neighborhood of \$5.00 for one pint of the elixir. The dose prescribed is one tablespoonful four times a day. Patients are put on a restricted fluid intake of 1200 c. c. daily in order to concentrate the drug more effectively in the urine. A somewhat crude effort to produce a high acid ash diet is attempted by prohibiting the use of all alkalis, all fruit juices, beans, olives, spinach and molasses. The effectiveness of mandelic acid is to a large degree dependent upon the acidification of the urine. Therefore, the pH of the urine of these patients while under treatment is very closely watched. For this purpose, we use a very simple and cheap pH determinator consisting of strips of paper impregnated with nitrazine, which paper is wet with the urine and then its color compared to an accompanying color chart. This is the simplest and cheapest of all pH determinators, has been checked time and again by us, and has been proved to be as accurate as any of the more expensive indicators provided it is properly used.

It is known that mandelic acid can exert no bactericidal action in a urine, the pH of which is above 5.7. Helmholtz has shown that even at this level, a concentration of one per cent of mandelic acid is necessary to produce bactericidal action. However, at a pH below 5, only 0.25 per cent concentration of mandelic acid is necessary. Therefore, it is of much importance constantly to check the acidity of the urine and be certain to achieve the desired pH. Our clinical rule is that any patient whose pH does not fall to 5.2, or less, with the use of the mandelic acid preparation alone, is given ammonium chloride in doses of 20 grains four times daily, in the form of enteric coated tablets, to produce the desired acidity. The patients are kept on this routine for a period of from two to three weeks. It is usually noted that whatever symptoms the patient is suffering from at the time treatment is begun are usually relieved within the first several days of treatment. If the treatment is to succeed, the urine rapidly becomes free from pus and organisms as far as stained smears can determine. However, the treatment is maintained for a period of at least a week after negative smears are obtained. Should a course of treatment fail to produce the desired effect, we usually wait for a period of from two to four weeks and then repeat the course. Occasionally, the second course will eradicate the infection. The largest number of courses that we have given here has been four and the longest single course has been twenty-three days.

The ill effects produced by the use of mandelic acid have been slight, the most common of which have been nausea and symptoms of indigestion

while taking the drug. A rare complication noted in this clinic has been a skin rash, which, we feel sure, was due to the acid, as it disappeared on cessation of treatment and reappeared when treatment was resumed. We routinely examine the urinary sediment of patients while under treatment to guard against renal injury due to the drug. So far, however, we have seen no evidence of red cells or casts in any of our patients and, therefore, assume that we have produced no renal damage. There are no age limitations to the use of this drug. The only definite contraindications to the use of mandelic acid are advanced renal disease with loss of function and secondary factors of stasis, obstruction or foreign bodies in the urinary tract, which preclude the possibility of eliminating an infection. The alkaline urea-splitting infections have been found resistant to all forms of treatment, and this is no less true with the use of mandelic acid, as attested by our one case of proteus bacillus infection which resulted in complete failure even after three courses of treatment.

In conclusion, I may say that we are at present trying out two even newer drugs in the treatment of urinary infections, namely, phenyl-mercuric nitrate and prontosil. We have a number of cases now taking these drugs, but, as yet, are unable to report our results, as the patients are still under treatment.

NORTH LOUISIANA SANITARIUM

The meeting of the Staff of the North Louisiana Sanitarium was called to order by the President on March 23, 1937, with 22 doctors present. After the disposal of routine business, attention was turned to the scientific program.

Dr. Mays reported on a case of anemia of pregnancy, discussing the treatment and its complications. The case was discussed by Dr. Trifon.

Dr. Heard then reported a case that had suffered acute rupture of the appendix at the age of 12, seven years ago. At operation, a drain was inserted and the usual conservative treatment carried out. Patient made an uneventful recovery. Three weeks ago, March 3, patient was readmitted to the Hospital with acute lower abdominal pain, fever and leukocytosis. On the basis of the past history and non-removal of the ruptured appendix seven years ago, fever, leukocytosis and pain, a diagnosis of ruptured appendix was again made. At operation, it was found that the terminal end of the appendix had ruptured. The appendix was successfully removed, drain inserted and the patient had an uneventful post-operative course. The case was interesting from the standpoint that the patient had peritonitis twice and recovered.

There being no further business, the meeting adjourned.

H. M. Trifon, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

JULY 5. Board of Directors, Orleans Parish Medical Society, 8 p. m.

JULY 5. Pathologic Conference, Hotel Dieu, 8:15 p. m.

JULY 6. Eye, Ear, Nose and Throat Staff, 8 p. m.

JULY 7. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JULY 7. Mercy Hospital Staff, 8 p. m.

JULY 9. French Hospital Staff, 8 p. m.

JULY 12. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m. Following this meeting, the Society adjourns during the months of July, August and September.

JULY 14. Touro Infirmary Staff, 8 p. m.

JULY 15. Eye, Ear, Nose and Throat Club, 8 p. m.

JULY 16. I. C. R. R. Hospital Staff, 12 noon.

JULY 19. Hotel Dieu Staff, 8 p. m.

JULY 20. Charity Hospital Medical Staff, 8 p. m.

JULY 21. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JULY 21. Charity Hospital Surgical Staff, 8 p. m.

JULY 27. Baptist Hospital Staff, 8 p. m.

JULY 28. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of June, besides the regular meeting of the Board of Directors, the Society held one regular scientific meeting and one joint clinical meeting at the United States Marine Hospital. At the meeting held Monday, June 14, the following program was presented:

Dr. Reynaldo Dos Santos, Professor of Surgery, University of Lisbon, Portugal—Arteriography.

Dr. Rudolph Matas—Vascular Surgery.

Dr. J. Ross Veal—Exhibit on Arteriography.

Dr. Rigney D'Aunoy and Dr. Emmerich von Haam—Exhibit on Aneurysms.

In line with a resolution unanimously passed by the American Laryngological Association, Dr. LeJeune offered a motion at this meeting calling upon the Congress to pass legislation making a supply of helium available to authorized institutions for the relief of sufferers from asthma, lung or throat tumors, pneumonia and other causes of asphyxial death.

The Secretary was instructed to contact our Senators and Representatives soliciting their aid in making helium available to medical science. Motion unanimously passed.

The following program was presented at the Clinical Meeting at the United States Marine Hospital, June 28:

1. Rupture of the Biceps Brachii.

By:_____Dr. Richey L. Waugh
Discussed by Dr. Waldemar R. Metz.

2. The Pathologic Physiology and Pathology of Experimental Gas Gangrene.

By:_____Dr. Joseph G. Pasternack
Discussed by Dr. John A. Lanford.

3. Public Health Aspects of the Recent Flood.

By:_____Mr. Howard N. Old
Discussed by Dr. Winfield K. Sharp.

Refreshments were served following the meeting.

Dr. F. L. Jaubert was re-elected President of the Louisiana Society for Crippled Children at its annual meeting held Friday, May 28.

Dr. H. L. Kearney attended the meetings of the American Otological Society held at Long Beach, Long Island, May 27-29, and the Triological Society held at Atlantic City, June 1-4.

At the meeting of the Tangipahoa Parish Medical Society held at Hammond, Louisiana, on Thursday, May 20, Drs. Roy E. de la Houssaye, Frederick L. Fenno, Emmett Irwin, and M. T. Van Studdiford read papers.

Touro Infirmary will be represented at the International Hospital Conference to be held in Paris, France, July 6 to 11. The Board of Managers has announced that Dr. A. J. Hockett, Superintendent of Touro, will represent the institution at this conference.

It has been announced by Tulane University that Dr. John Taylor Halsey, head of the Department of Pharmacology of the School of Medicine who has served in that Department since 1924, will retire at the close of the current school year. Dean Bass announces that Dr. Erwin E. Nelson of Ann Arbor, Michigan, will succeed Dr. Halsey as head of the Department of Pharmacology.

Dr. Elizabeth Bass attended the meetings of the American Medical Association and the Medical Women's National Association held in Atlantic City, June 7-11. Following these meetings, she will go as a delegate to the Fourth Congress of the Medical Women's International Association, which meets this year in Edinburgh, Scotland, July 13-19. The general subjects for the meeting will be "Cancer in Women and Its Prevention" and "Maternal Mortality." The delegates will be entertained in London by the British Medical Women's Federation, with visits to schools and hospitals, one notable hospital being the Marie

Curie Hospital. They will also be entertained in Paris by the French Association of Medical Women. Preceding these meetings, Dr. Bass will visit with several officers of the Medical Women's National Association, and will tour to hospitals in Southern Europe and Asia Minor which were established by this Association during the World War.

Dr. Laurence R. DeBuys presided at the annual convention of the American Academy of Pediatrics in New York, June 3 to 5. After the Academy adjourned Dr. DeBuys attended the meeting of the American Medical Association in Atlantic City.

Dr. E. Harold Hinman resigned as an Associate Member of the Society because of removal to Wilson Dam, Alabama, to assume duties in the Health Section of the Tennessee Valley Authority.

We regret to report the death of Dr. Russell E. Stone, one of our Active Members.

TREASURER'S REPORT

MAY

ACTUAL BOOK BALANCE: 4/30/37.....	\$3,818.31
May Credits	470.41

TOTAL CREDITS	\$4,288.72
May Expenditures.....	681.58

ACTUAL BOOK BALANCE: 5/31/37.....	\$3,607.14
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LIBRARIAN'S REPORT

MAY, 1937

The 38th meeting of the Medical Library Association was held in Richmond, Virginia, May 22-26, 1937. The Medical College of Virginia and the Richmond Academy of Medicine were the official hosts. The meeting was largely attended with a registration of 88 medical librarians from all parts of the country. Miss Marshall represented our Library and that of the Tulane University School of Medicine.

The program afforded much interest of a technical and historical nature. Round table conferences for medical school libraries, medical society libraries and dental libraries offered an opportunity for free discussion of library problems and methods. Miss Marshall read a paper on Plantation Medicine,—the organization for the preservation of health on the old plantations and the planning for medical care in time of illness.

Exhibits of rare medical books and medical silhouettes, medical history in Richmond, evolution of costume of physicians and of means of transportation, from the days of the rowboat and the saddle-horse to the present-day aeroplanes, aroused much interest.

Opportunity was accorded for visits to Washington and Lee University, University of Virginia, Medical College of Virginia, and William and Mary College.

Following the meeting, Miss Marshall went on to Washington to do some special reference work in the Library of Congress for three days.

Attendance at such a meeting, devoted solely to the interests of medical libraries is of inestimable value, not only in offering an opportunity for visiting medical libraries and in taking part in technical discussions of library procedures, but even more because one thereby meets personally those who are workers in the same special field, and is able to exchange with them suggestions as to methods and solutions of medical library problems.

NEW BOOKS—MAY, 1937

Royster, H. A.: Medical morals and manners. 1937.

Wexberg, Erwin: Our children in a changing world. 1937.

Jenkins, H. P.: Terminology of operations of the University of Chicago Clinics. 1935.

Kahn, R. L.: Tissue immunity. 1936.

Mason, R. L.: Preoperative and postoperative treatment. 1937.

Morris, Margaret: Maternity and postoperative exercises. 1936.

Tirala, L. G.: Cure of high blood pressure by respiratory exercises. n.d.

Blanchard, C. E.: Handbook of ambulant proctology. 1937.

Stevenson, G. S.: Child guidance clinics. 1934.

LeFleming, E. K.: Introduction to general practice. 1936.

Thornton, Janet: Social component in medical care. 1937.

Newcomer, M. S.: Bewildered patient. 1936.

Hoffman, F. L.: Cancer and diet. 1937.

Rienhoff, William, Sr.: Principles and foibles of cancer research. 1936.

Kuntz, Albert: Text-book of neuro-anatomy. 1936.

Davis, A. E.: Cataract, its preventive and medical treatment. 1937.

Gifford, S. R.: Hand-book of ocular therapeutics. 1937.

Diethelm, Oskar: Treatment in psychiatry. 1936.

White, P. D.: Heart disease. 1937.

Fisher, Wl A.: Senile cataract. 1937.

Thornton, E. Q.: Medical formulary. 1937.

Trumper, Max: Memoranda of toxicology. 1937.

Medical Directory (British), 1937. 1937.

American Association for the Study of Goiter Transactions. 1932-1936.

Practitioner's Library of Medicine and Surgery.

V. 12. Hygiene and Preventive Medicine. 1937.

American Therapeutic Society Transactions.

1935-36.

William Allen Pusey, by his friends and co-workers. 1937.

U. S. Childrens' Bureau: The child from one to six. 1931.

A.M.A.—Medical economics bureau—Introduc-

tion to medical economics. 1935.

Julius Rosenwald fund: Eight years' work in medical economics, 1929-36.

Iiams, T. M.: Preservation of rare books and manuscripts in the Huntington Library. 1932.

Gilbert C. Anderson, M. D., Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

SECOND DISTRICT MEDICAL SOCIETY

A regular meeting of the Second District Medical Society was held in the beautiful old Colonial Home at Destrehan, La., the evening of June 17, 1937.

The Second District Medical Society is considered by organized medicine as a very active and important medical organization. The membership is composed of physicians who are residents of several parishes near New Orleans.

Dr. F. S. Herrin, of Destrehan, La., President, and during his tenure of office he has initiated certain innovations which have been of considerable help to the Society. His activities in organized medicine have fitted him splendidly for the office he occupies.

The guest speaker of the evening was Dr. John G. Menville, Instructor in Urology at the Tulane Medical School. He spoke at length on urinary tract infections, expatiating on the effect certain drugs had on such infections, and illustrating his talk with numerous roentgen ray films of interesting cases. A lengthy discussion followed, participated in by a number of the physicians present.

Dr. Herrin, acting as host, entertained the members of the Society and invited guests at a supper. Those present at the meeting were: Dr. Wm. B. Clark, Dr. L. W. Alexander, Dr. N. K. Edrington, Dr. L. J. Menville, Dr. R. F. Sharp, Dr. J. G. Menville, and Dr. A. H. Sellman, all of New Orleans; and Dr. J. S. George, Metairie Ridge; Dr. J. S. Kopfler, Kenner; Dr. J. S. Parker, Reserve; Dr. L. O. Waguespack, Vacherie; Dr. L. T. Donaldson, Hahnville; Dr. P. A. Donaldson, Reserve; Dr. J. E. Clayton, Norco; Dr. W. M. Guillotte, Dr. E. P. Feucht, La Place, and Dr. John W. Atkinson, Gretna, La.

J. W. Atkinson, M. D., Sec.

SEVENTH DISTRICT MEDICAL SOCIETY

The Seventh District Medical Society held its quarterly meeting June 10, 1937, at Opelousas, Dr. Olin W. Moss, Lake Charles, presiding. Forty-seven members and five guests were present.

Dr. Shirley C. Lyons, New Orleans, spoke on, "Carbuncles: A New Conservative Method of Treatment," and Dr. Willard R. Wirth, New Or-

leans, presented a paper, "Heart Disease and Pregnancy." Both papers were highly interesting and instructive and were well received by the members of the Society.

The next speaker introduced by Dr. Moss, was Dr. C. M. Horton, Franklin, president of the Louisiana State Medical Society, who graciously accepted an invitation to attend this meeting. He spoke on the need of better organization of the profession; on the effects of socialized medicine; on a new plan of group insurance for the State Society; on the effective work of the legislative committee; and on the great need and desirability of the younger members of the profession taking an active interest in organized medicine.

Dr. Fred Mayer read a resolution on the dangers of carbon monoxide gas, which was adopted by the organization. Dr. J. M. Whitney, Jennings, presented a resolution on the need of a Public Health Laboratory in southwest Louisiana, which was also adopted.

The September meeting is to be held in Lake Charles.

SHREVEPORT MEDICAL SOCIETY

The regular meeting of the Shreveport Medical Society was called to order by the President on June 1, 1937, with 30 members and one guest present. The minutes of the previous meeting were read and adopted.

Reports: The Treasurer reported a balance on hand of \$1384.03, of which \$900.00 was allocated to the building fund.

Dr. Crebbin, Chairman of the Public Health and Legislation Committee, gave a brief report of his Committee's activities in investigating certain irregular practitioners, but stated that no definite results had been obtained as yet.

This was the annual economics meeting prescribed by the constitution. Dr. Heidorn read a letter from Dr. Barrow in which he pointed out that it was advocated by both the State and Local Societies that the names of the physicians broadcasting under the auspices of the Medical Society be announced. Dr. Barrow also called attention to advertisements of certain drug stores, which were considered improper. Finally, Dr. Barrow,

in his letter, stated that he had heard a rumor that some of the hospital insurance associations were contemplating extending to include medical benefits. Dr. Lucas made a motion that a special committee be appointed to cooperate with the Public Health and Legislation Committee to investigate the improper practice of medicine by druggists and that this committee have authority to carry out any action or to make any recommendation to the Society it deemed advisable. No action was taken by the Society on the other matters.

Dr. Wolfe made a motion that the Society consider publishing each year a list of the members in good standing of the Shreveport Medical Society so that the public may be informed who they are. He included in his motion that the matter be referred to the Ethics Committee for investigation and report. This motion was duly seconded and carried.

Dr. Bodenheimer made a motion that the officers of the Society contact the local papers and see if they will publish as news the names of those who read papers before the Society, the list of doctors attending the meeting and any matters of public interest. This motion was duly seconded and carried.

Unfinished Business: The oath of membership was administered to Dr. W. M. Hall by the President.

New Business: Applications for membership in the Society were received from Drs. C. E. Boyd and C. S. Holt. Being found in proper order, the Society ordered that they take the usual course.

Paul D. Abramson, M. D., Sec.

TRI-PARISH MEDICAL SOCIETY

The regular meeting of the Tri-Parish Medical Society was held at Tallulah on June first in the rooms of the Tallulah Book Club. The following members were present: Drs. J. P. Davis, President, B. J. Aymond, L. B. Landry and William H. Hamley, Secretary, of East Carroll Parish; G. W. Gaines, E. O. Edgerton and L. Stevens of Madison Parish; D. W. Kelly, B. L. Bailey and F. A. La-Cour of West Carroll Parish; William K. Evans, Joseph Whitaker and T. P. Sparks of Tensas Parish. Drs. A. Scott Hamilton and Leon Titcher, of Monroe, were guests of the Society.

Dr. L. B. Landry, Director of the East Carroll Parish Health Unit at Lake Providence was elected to membership.

Following the business session, two scientific papers were presented. The first paper was read by Dr. A. Scott Hamilton, the subject being "Orthopedic Treatment in Infantile Paralysis." This paper was discussed by Drs. Whitaker, Stevens and Hamilton. A paper, "Some Remarks on the Formation of a Kidney Stone" was then read by

Dr. T. P. Sparks of Newellton. This paper was discussed by Drs. Aymond, Hamilton and Sparks.

The next meeting of the Society will be held at Lake Providence on July sixth.

William H. Hamley, M. D., Sec.

ST. LANDRY PARISH MEDICAL SOCIETY

A meeting of the St. Landry Parish Medical Society was held in Opelousas on June 10, 1937. The meeting, which was a business session, was well attended. Dr. Claude A. Martin, of Welsh, Councilor of the Seventh Congressional District, was present. Drs. Willie Littell and E. L. Landry were admitted to membership.

The following officers were elected for the year 1937: President, Dr. S. J. Rozas; Vice-President, Dr. L. Lazaro; Secretary-Treasurer, Dr. O. J. Bienvenu.

O. J. Bienvenu, M. D., Sec.

BI-PARISH MEDICAL SOCIETY

A meeting of the East and West Feliciana Bi-Parish Medical Society was held in Jackson, Louisiana, on June second. Following the business session, Dr. James T. Nix, guest speaker from New Orleans, presented an interesting and instructive paper on cancer. Dr. Manuel Garcia, also of New Orleans, assisted Dr. Nix with motion pictures illustrating the paper. General discussion by the members of the Society ensued.

Drs. Nix and Garcia were elected honorary members of the Bi-Parish Society.

E. M. Toler, M. D., Sec.

VERMILION PARISH MEDICAL SOCIETY OFFICERS 1937

President: Dr. J. T. Abshire, Kaplan.

Vice-President: Dr. Leo Saporito, Kaplan.

Secretary-Treasurer: Dr. A. A. Comeaux, Abbeville.

Delegate: Dr. J. T. Abshire, Kaplan.

Alternate: Dr. Leo Saporito, Kaplan.

LAFAYETTE PARISH MEDICAL SOCIETY OFFICERS 1937

President: Dr. A. R. Trahan, Lafayette.

Vice-President: Dr. F. H. Davis, Lafayette.

Secretary-Treasurer: Dr. R. S. Hernandez, Duson.

Delegate: Dr. O. P. Daly, Lafayette.

Alternate: Dr. J. D. Hutchins, Lafayette.

FIFTH INTERNATIONAL CONGRESS OF RADIOLOGY

Dr. Arthur C. Christie, Washington, D. C., president of the Fifth International Congress of Radiology, which will meet in Chicago, September 13, 17, inclusive, says it will be the first time that an international congress of this branch of medi-

cine—the diagnosis and treatment of injury and disease by roentgen rays and radium—has ever been held in America. The Congress will be attended by at least 2,000 delegates and visitors from all parts of the United States and probably 500 delegates from thirty nations in Europe, North and South America, and Asia.

Honorary vice-presidents of the Congress are Dr. George E. Pfahler, of Philadelphia, Pennsylvania; Dr. James Ewing, of New York City, and Dr. William D. Coolidge, of Schenectady, New York.

LOUISIANA SOCIETY OF GASTRO-ENTEROLOGY

On May 10, 1937, the Louisiana Society of Gastro-enterology, an affiliated chapter of the National Society for the Advancement of Gastro-enterology, was organized. The following officers were elected: Dr. A. L. Levin, President; Dr. Herbert Weinberger, Vice-President; Dr. Louis Ochs, Jr., Secretary-Treasurer.

Drs. A. L. Levin and J. Ross Veal were elected delegates to the National Convention to be held in Atlantic City, June 9-11, 1937.

AMERICAN MEDICAL ASSOCIATION

The following are some of the doctors from Louisiana who attended the meeting of the American Medical Association held in Atlantic City, June 7-11, 1937: Drs. Charles A. Bahn, Elizabeth Bass, George Battalora, Merrill C. Beck, Oscar W. Bethea, Clyde Brooks, Charles L. Brown, Donovan C. Browne, W. R. Buffington, Sam C. Cohen, Isidore Cohn, L. R. DeBuys, B. J. DeLaureal, Theodore J. Dimitry, George H. Hauser, Joseph S. Hebert, J. K. Howles, Edwin H. Lawson, Maurice Lescale, A. L. Levin, Urban Maes, Rudolph Matas, John H. Musser, Alton Ochsner, Joseph A. O'Hara, Walter J. Otis, Peter B. Salatich, John T. Sanders, W. H. Seemann, Robert A. Strong, D. N. Silverman, H. Theodore Simon, R. W. Todd, M. T. Van Studdiford, Emmerich von Haam, H. W. E. Walther and E. L. Zander, New Orleans; R. E. Dupre, Ville Platte; R. J. Spedale, Plaquemine; M. S. White, Barksdale Field; Marion H. Foster, Alexandria; Paul D. Abramson, Shreveport; James Q. Graves, Monroe; Stakely Hatchette, Lake Charles; Thomas A. Dekle, Jonesboro; W. M. McBride, Hodge, and C. S. Sentell, Minden.

NEWS ITEMS

Professor C. C. Dauer, of the faculty of the Graduate School of Medicine of The Tulane University of Louisiana, addressed the meeting of the National Tuberculosis Association held in Milwaukee, Wisconsin, May 31 to June 3, on "Sex Differences in Tuberculosis Mortality." Follow-

ing this meeting Professor Dauer will carry on a special study of tuberculosis in Michigan, New York, and other states.

Surgeon William L. Smith, has been directed to proceed from New Orleans to Washington, D. C., for temporary duty for a period of about three weeks, beginning June 23, 1937, U. S. Public Health Service Dispensary, and return to station upon completion of the temporary duty.

THE AMERICAN COLLEGE OF PHYSICIANS

The twenty-second Annual Session of the American College of Physicians will be held in New York City, with headquarters at the Waldorf-Astoria Hotel, April 4-8, 1938.

Dr. James H. Means, of Boston, is President of the College, and will have charge of the program of general scientific sessions. Dr. James A. Miller, of New York City, has been appointed General Chairman of the Session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of Round Table Discussions to be conducted at headquarters.

PAN AMERICAN MEDICAL ASSOCIATION

The Pan American Medical Association will hold its Seventh Cruise-Congress on the "Queen of Bermuda." The ship will sail from New York on January 15, 1938 and will arrive back on January 31. Four and a half days will be spent in Havana, where the main part of the Congress will be held. From Havana, the ship will go to Port au Prince, Trujillo City (Santo Domingo), San Juan (Puerto Rico) and return to New York.

AMERICAN CONGRESS OF PHYSICAL THERAPY

Announcement is made of the sixteenth annual clinical and scientific session of the American Congress of Physical Therapy, September 20-24, 1937 at the Netherland Plaza Hotel, Cincinnati. The program includes many special features; sectional meetings in the specialties, symposia on short wave diathermy, hyperpyrexia, electrosurgery. Fever therapy and the treatment of vascular diseases occupy an important place and will be discussed by prominent workers in the field.

Physicians, their technical assistants, and nurses working in institutional departments of physical therapy are urged to attend this important session. It undoubtedly will be one of the outstanding medical gatherings of the year. There will be no registration fee.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending May 16, there were 142 deaths in the City of New Orleans,

of which 86 were in the white race and 56 in the negro. Fifteen of these deaths were in infants under one year of age. For the week ending May 22, there was one less death than the preceding week, but the ratio was somewhat different, being 74 white and 67 negro. The infant mortality rate was practically the same. For the week ending May 29, the number of deaths increased to 156, of which 89 were white and 67 negro. The infant mortality was the same as that of the preceding week. For the week ending June 5, the number of deaths fell to 147, of which 97 were white and 50 negro. There were seventeen deaths in infants under one year of age this week. The number of deaths in the three year period for the corresponding week averaged 144. So far the death rate in the city is considerably smaller than it was in 1936. There have been approximately 50 less deaths than during the first 22 weeks of the preceding year.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the week ending May 15, the following diseases were reported to the State Board of Health in numbers greater than 10. Pneumonia led the list with 55 cases, followed by 33 of syphilis, 32 of cancer and pulmonary tuberculosis, 20 of gonorrhea, 18 of scarlet fever, 17 each of influenza and malaria, 13 of typhoid fever, 12 of diphtheria and 11 of measles. The typhoid fever cases were scattered throughout the state. For the week ending May 22, syphilis had gone to the front with 65 cases recorded, followed by 38 of pneumonia, 31 of gonorrhea, 30 of pulmonary tuberculosis, 17 of typhoid fever, 14 of malaria, 12 of cancer, 11 of scarlet fever and 10 of diphtheria. Of the rare diseases, a case of poliomyelitis was reported from Caddo Parish and two cases of undulant fever from New Orleans. The respiratory tract infections were way ahead of all reported diseases for the week ending May 29, with 54 cases of pulmonary tuberculosis and 53 cases of pneumonia sent in to the Bureau of Epidemiology. Other diseases which occurred in double figures included 26 cases of malaria, 21 of cancer, 17 of syphilis, 14 of typhoid fever, 13 each of diphtheria and influenza, 11 of whooping cough. One case of tularemia was reported from Richland Parish and one case of undulant fever from Iberia Parish. The succeeding week, pneumonia was still on the increase, while pulmonary tuberculosis, the next most frequently reported, was way down. There were reported 67 cases of the former and 28 of the latter. There were also 20 cases of cancer and 15 each of malaria, scarlet

fever and typhoid fever. Except for pneumonia, in this week, the reported diseases were few in number and the number of cases reported was small. One case of poliomyelitis was reported from West Carroll Parish. For the twenty-third week of the year, ending June 12, syphilis again regained the lead with 62 cases. There was a slight drop in the incidence of pneumonia as the names of 56 patients only were sent in to the reporting office. Other diseases included 48 cases of gonorrhea, 41 of pulmonary tuberculosis, 36 of malaria, 22 of cancer, 14 of influenza, 13 of diphtheria and 10 of typhoid fever. One case of smallpox was discovered in Caldwell Parish. Two cases of poliomyelitis were reported, one from Orleans and the other from St. Helena. One case of typhus fever, a delayed report, was sent in from Jefferson Davis.

RUSSELL EDWARD STONE, M. D.

The many friends of Dr. Stone were shocked to hear of his death on Friday, June eighteenth, as a result of complications following acute appendicitis.

Dr. Stone was born in Missouri, entered the University of Buffalo, and, subsequently, attended Vanderbilt and the University of Pennsylvania. Dr. Stone served in the United States Army during the World War. He was connected with the Touro Infirmary, where, for some years, he had been associated with Dr. Matas. In the last few years of his life, Dr. Stone was one of the outstanding surgeons. Never a very prolific contributor to medical literature, nevertheless, he was a keen student of surgery and had a large surgical practice.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Hebert, New Orleans.

WELCOME TERREBONNE PARISH

Terrebonne Parish just recently has organized. We welcome them into the auxiliary and hope to hear from them soon.

ORLEANS PARISH

The Orleans Parish Auxiliary officers for the year 1937-1938 are:

President—Mrs. Jules Myron Davidson.

President-Elect—Mrs. C. Grenes Cole.

First Vice-President—Mrs. Ernest Allgeyer.

Second Vice-President—Mrs. Asahel J. Hockett.

Third Vice-President—Mrs. H. Theodore Simon.

Fourth Vice-President—Mrs. H. Vernon Sims.

Treasurer—Mrs. John S. Dunn.

Recording Secretary—Mrs. Willard Wirth.

Corresponding Secretary—Mrs. Charles L. Brown.

Publicity—Mrs. John Oakley.

Parliamentarian—Mrs. Anees Mogabgab.

Historian—Mrs. Jonas Rosenthal.

Of interest to our members is the class in Home Hygiene and Care of the Sick which is conducted by the New Orleans Chapter of the American Red Cross. The class is open to all auxiliary members.

Mrs. John Oakley,

Publicity Chairman.

An Executive Board meeting of the State Auxiliary was held at the home of the President, Mrs. George D. Feldner, on Wednesday, June ninth. Many important activities were discussed and the State Emblem was adopted, Louisiana being the first state to adopt the Emblem.

Mrs. Lucian W. Alexander, Chairman,
Press and Publicity.

BOOK REVIEWS

Physiology in Health and Disease: By Carl J. Wiggers, M. D. 2d ed. Philadelphia, Lea and Febiger, 1937. pp. 1124, 191 illus. Price, \$9.00.

The second edition shows improvement over the first. It has been thoroughly revised, considerably rewritten and brought up to date. Many errors crept into the first edition. Most of these have been corrected. It is unkind to call attention to the obvious, but there is an instance on p. 210 in which olfactory stimulation is referred to the accessibility of substances to the superior auditory meatus. Just above there is an error in tense. The book is a storehouse of useful information. It deals essentially with applied physiology based on general principles.

HENRY LAURENS.

Trauma and Disease: Edited by Leopold Brahdy, B. S., M. D., and Samuel Kahn, B. S., M. D. Philadelphia, Lea and Febiger Company, 1937. pp. 613. Price, \$7.50.

This is an unusual book. The list of contributors is sufficient guarantee that the contents represent judgment based on experience. Each chapter is a monograph on the subject treated. The carefully compiled bibliography makes the book invaluable as a reference work. It is a welcome departure in book making.

Every student of traumatic surgery will do well to consult this volume frequently as he will find its pages replete with information which ordi-

narily he would have to search a great amount of literature to obtain.

The book is well conceived, well compiled and well written.

ISIDORE COHN, M. D.

Thyroid and Its Diseases: By J. H. Means, M. D. Philadelphia, J. B. Lippincott Company, 1937. pp. 602. Price \$6.00.

This book is of value because it affords a satisfactory survey of this field along with the author's views as based upon experience in the Massachusetts General Hospital Group. It is, therefore, no dry as dust compendium of knowledge bearing upon the thyroid. Dr. Means has succeeded in giving his treatise a personal flavor thus adding to the interest in reading and increasing the value of his work. Of particular interest is his disagreement with Plummer's theory of the two product thyroid secretion. Plummer, as will be recalled, has held that, in exophthalmic goiter, the thyroid gland is making not only an excess of hormone but also a chemically abnormal hormone, whereas in toxic adenomatous goiter there is only an excess of the normal hormone. Means says, "It occurs to us, however, that the differences in pictures may as well be due to differences in persons afflicted as to differences in hormone. Let us call the unknown cause of spontaneous thyrotoxicosis x. Then it is not unreasonable to suppose that x acting over a long period of time in a person past forty with pre-existing nodular goiter and arteriosclerosis may have quite a different effect than when it suddenly strikes a younger per-

son with a previously normal thyroid but peculiar constitution." Similarly, Means holds that in hyperthyroidism the response of the individual to the disease plays a role, though less in myxedema than in toxic goiter. He finds, however, that when the patients begin to get treatment with thyroid their behavior and symptoms begin to diverge.

The purpose of a review is to give an idea of the content of a book, and in the case of a worthwhile book to stimulate interest in it by comment, quotation and discussion. It has been the purpose of the present review to give the impression that Dr. Means' book is worth reading and digesting for anyone concerned, as we all are, in the problems related to the thyroid gland.

I. I. LEMANN, M. D.

Introduction to Medical Science: By William Boyd, M. D., M. R. C. P. (Edin.), F. R. C. P. (Lond.), Dipl. Psych., F. R. S. (Canada). Philadelphia, Lea and Febiger, 1937. pp. 307. Price, \$3.50.

This little book of some two hundred and fifty pages has been written primarily for nurses, pre-medical students and technicians, although the medical student could find much of interest in it. The object of the book is to give an "aeroplane" view of the disease. Technical terms have been avoided as much as possible. The first section deals with the general principles of disease, the second with the diseased organ and the third with some practical applications. The book is well illustrated and the style is clear and lucid. It should appeal strongly to those for whom it is written.

RANDOLPH LYONS, M. D.

Maternity and Post-Operative Exercises: By Margaret Morris, C. S. M. M. G. and M. Randell, S. R. N., S. C. M., T. M. M. G. New York, Oxford University Press, 1936. pp. 152. Price, \$2.00.

This book is a rather simple manual of calisthenics adaptable to sick and well alike. The exercises as described are accompanied by simple diagrams. The so-called special maternity exercises may be ideal, but it is rather difficult to conceive of the average pregnant woman performing this routine. However, if confined to the first trimester of pregnancy, these exercises may be of value in conditioning the patient for the remainder of her pregnancy.

ZACHARY J. ROMEO, M. D.

Senile Cataract; Methods of Operating: By W. A. Fischer, M. D., F. A. C. S. Chicago, The H. G. Adair Printing Co., 1937. pp. 150.

There are 150 pages to the third revised edition of "Methods of Operating Senile Cataract," and by actual count, 187 illustrations. The illustrations are greater in number than that of the pages. This is made possible by adopting the popular 35 mm. size picture. They depict each step of the operative procedure, and so nicely, that they could be considered a series of animated diagrams.

The author subordinates his own procedure and preferences for those of certain eminent teachers on the subject so as to obtain a more important goal, viz., to have the operation of intra-capsular cataract extraction made familiar to the ophthalmic surgeon, hoping to have him imitate and master it.

The first chapter of the book is written by Hofrat Professor Ernest Fuchs of Vienna. The second, by Professor I. Barraquer of Barcelona, Spain, and the third, by Dr. H. T. Holland of Shikarpur, Sind, India. It is only in the sixth chapter that he allows his personal likes and dislikes to enter into the problem. In this chapter he speaks of the value of the Nugent superior rectus forceps, and the picture of it shows it to have merit.

If you wish to be informed on the intra-capsular extraction technic, whether it is that of Smith, Barraquer or Knapp, this little book will reveal the information such as you would wish to learn on a visit to the great clinics throughout the world.

THEODORE J. DIMITRY, M. D.

Cataract, its Preventive and Medical Treatment: By H. Edward Davis, A. M., M. D. Philadelphia, F. A. Davis Company, 1937. pp. 155. Price, \$3.00.

The author of this little volume would seek out the cause for the oncoming of the cataract and endeavor to prevent it. The book reveals him as an indefatigable worker in the field of preventive medicine and immunology.

The ophthalmologist cannot neglect to familiarize himself with the author's views. He is logical and the book he presents is a labor of years. The work of Dr. A. Edward Davis is to be encouraged. He has something to write about and possesses the ability to write. He is also a research student.

He would change the cataract status as the foremost cause of blindness, now 34.1 per cent, to a much lower level.

There are twelve chapters. The first is historical. It begins with the code of Hammurabi and concludes with immunological treatment. The beginner will enjoy chapter four wherein he deals

so thoroughly with the symptoms. Chapters five and six are of great interest to the advanced ophthalmologist. In this last chapter he speaks of the lens breathing and develops most academically the permeability of its capsule.

No one interested in the cataract problem should neglect to read this book.

THEODORE J. DIMITRY, M. D.

Synopsis of Pediatrics: By John Zahorsky, A. B., M. D., F. A. C. P., assisted by T. S. Zahorsky, B. S., M. D. St. Louis, C. V. Mosby Company, 1937. pp. 367. 2d ed. Price, \$4.00.

A handy reference compend is a boon to the harassed student and the busy general practitioner, and the need for such a book is adequately filled by Dr. Zahorsky's "Synopsis of Pediatrics" in its second edition.

The plan followed in the first edition of dividing the subject-matter into sixty chapters to conform to the usual medical college requirement of sixty-hours' classroom work has been maintained, with the addition of a chapter on diseases of the special senses.

The subject of nutrition is most thoroughly covered for a book of such definite space limitations, there being seven chapters on nutrition and the feeding of well and sick infants, together with six chapters devoted to diseases of the alimentary tract. The plan of infant feeding is presented broadly without complete restriction to the author's personal solution of feeding problems. In describing artificial feeding, emphasis is placed on the nutritive ratio, i. e. the ratio of calories furnished by the protein to the calories of fat and sugar.

Among the several acidifying juices that may be added to cows' milk, the author mentions sauerkraut juice in addition to the more frequently used citrus fruit juices. Preference is given to dried milk as the food of choice in artificial feeding of infants, with acidified cows' milk second and evaporated milk third in choice.

The book is replete with excellent illustrations, many being full-page color plates. Especially informative for the student are the color plates illustrative of tonsillar exudates and the concomitant appearance of the mucous membranes of the oral cavity, together with an excellent illustration of Koplik's spots in authentic natural colors.

The chapters on the contagious diseases are brief but ample, though one regrets the omission of a detailed outline of the administration of Sauer prophylactic vaccine for pertussis. In diphtheria immunization the one-dose alum precipitated toxoid is preferred.

The ketogenic diet in the treatment of epilepsy

is mentioned but not described. Treatment of pyelitis is described along the lines pursued by the older clinicians, with no reference to the mandelic acid or urological treatment of the condition. No comment is made to either condemn or approve the estrogenic treatment of specific vulvovaginitis by administration of theelin.

Notwithstanding the minor omissions, either through choice or limitation of space, the publication of a second edition of Dr. Zahorsky's manual of pediatrics is fully justified and the book should have a most enthusiastic reception among students and practitioners.

EMILE NAEF, M. D.

PUBLICATIONS RECEIVED

Angus & Robertson Limited, Sydney, Australia: Infantile Paralysis and Cerebral Diplegia by Elizabeth Kenny.

Columbia University Press, New York: Short-Wave Diathermy by Tibor de Cholnoky.

Paul B. Hoeber, Inc., New York: Clinical Reviews of the Pittsburgh Diagnostic Clinic, edited by H. M. Margolis, B. S., M. D., F. A. C. P.

Lea & Febiger, Philadelphia: The Treatment of Diabetes Mellitus, Sixth edition, thoroughly revised, by Elliot P. Joslin, M. D. (Harvard), M. A. (Yale), with the cooperation of Howard F. Root, M. D., Priscilla White, M. D., and Alexander Marble, M. D. The Normal Encephalogram by Leo M. Davidoff, M. D., and Cornelius G. Dyke, M. D. Disinfection and Sterilization by Ernest C. McCulloch, M. A., D. V. M., Ph. D.

The J. B. Lippincott Company, Philadelphia: International Clinics, Volume II, Forty-seventh Series, 1937, edited by Louis Hamman, M. D.

The C. V. Mosby Company, St. Louis: Personal Hygiene by C. E. Turner, M. A., Dr. P. H.

Charles S. Thomas, Springfield: Dr. Bodo Otto and the Medical Background of the American Revolution by James E. Gibson.

William Wood and Company, Baltimore: Elements of Orthopaedic Surgery by N. Ross Smith, M. B., Ch. M. (Sydney), F. R. C. S. (Eng.). A Brief Outline of Modern Treatment of Fractures, second edition, by Waldo Spiers, A. B. M. D. The International Medical Annual, 1937, edited by H. Letheby Tidy, M. A., M. D. (Oxon.), F. R. C. P., and A. Rendle Short, M. D., B. S., B. Sc., F. R. C. S. A Textbook of Applied Biochemistry by Frank Wokes, B. Sc., Ph. C., F. I. C.

The Williams & Wilkins Company, Baltimore: The Avitaminoses by Walter H. Eddy, Ph. D., and Gilbert Dalldorf, M. D.

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SPECIALISTIC TRENDS IN MEDICAL EDUCATION AND PRACTICE*

P. GRAFFAGNINO, M. D.
NEW ORLEANS

The magnitude of medical practice can best be visualized by the records annually gathered and published by the American Medical Association. In the 6,189 registered hospitals in 1936, the total number of patients treated in this country reached 8,646,885 and the total patient days amounted to 332,516,856; more than 831,500 babies were born in hospitals. It is reasonable to estimate that for every patient treated in a hospital by a physician, at least four other patients were treated in the home. This would make a grand total of about 43,234,425 of our population who come under the observation or treatment of physicians yearly.

In our Charity Hospital in New Orleans in 1936 there were 7,756 gynecologic admissions, 10,726 obstetric admissions, 30,873 operations, and 40,624 accident room cases. In 1926, there were 3,022 gynecologic admissions, 4,876 obstetric admissions, 12,256 operations, and 26,426 accident room cases. In 1916, there were 1,933 gynecologic admissions, 2,031 obstetric admissions, 7,541 operations, and 16,682 accident room cases. In 1906, there were 563 gynecologic admissions, 716 obstetric admissions, 2,280 operations, and 6,104 accident room cases.

Any one who reviews the present teaching plan in our medical schools must admit that the students receive a very broad medical education upon which they may build a better understanding both of disease and of life. Yet, in spite of

the tremendous amounts of money spent for medical education in recent times, our schools are now utterly unable to turn out students properly equipped to practice general medicine, much less engage in the practice of the specialties of medicine.

The best that a medical school can hope to do under present conditions is to teach the fundamental and salient features of disease clearly and convincingly. It cannot hope to turn out all students proficient and equipped to practice in all branches of medicine. Primarily, the growth of specialism, both individually and collectively, must rest on a broad foundation of general medical training. However, specialists in medicine cannot be made by our present methods, nor by our present medical courses. Special studies and advanced training must be provided for.

To develop scientific effectiveness and clinical knowledge, certain special training is essential. Recognizing this fact, and anticipating the imminent possibility of compulsory regulation, the organized profession has recently been engaged in the establishment of some self-disciplinary method whereby recognition may be accorded those who acquire special qualifications. These efforts have resulted in the organization of national examining boards now covering most of the special branches of medicine and surgery. The Council and the Advisory Board for Medical Specialties (organized in 1933-1934 for the certification of medical specialists in the United States and Canada) consider that an applicant desiring to be certified as a specialist shall have had: (1) a period of study after the internship of not less than three years in clinics, dispensaries, hospitals or laboratories recognized by the same council as competent to provide a satisfactory training in

*President's Address before the Louisiana Gynecological and Obstetrical Society, Monroe, La., April, 1937.

the special field of study; (2) this period of specialized preparation to include intensive graduate training in anatomy, physiology, pathology and other basic medical sciences which are necessary to the proper understanding of the specialty in question; an active experience of not less than eighteen months in hospital clinics, dispensaries and diagnostic laboratories recognized by the Council as competent in the specialty; examinations in the basic medical sciences of a specialty as well as in the clinic, laboratory and public health aspects; (3) an additional period of not less than two years of study and/or practice. The various boards in their respective and autonomous capacity certify the applicants.

Although it is true that a license to practice, while conferring the statutory right upon the physician to perform any services embraced within the legal definition of the practice of medicine and surgery, has not *qualified* the licensee to act in any other capacity than that of general practitioner, and certainly does not endow him with the special knowledge and skill required of the specialist.

A timely recent editorial appearing in the Journal of the American Medical Association, April, 1937 entitled "Liberty or License in Medical Education" truly expresses the honest opinion of the leaders in the medical profession, and I am taking the liberty of quoting from this editorial: "Freedom of action which contravenes the rights of others is no longer liberty. The state owes to its citizens the duty to protect them from ignorance and incompetence masquerading as medical skill. Health and life itself, our most treasured possessions, must be safeguarded, even at the expense of denying by statutory restrictions the freedom of every individual, trained or untrained, to practice medicine and certain other professions. If this is conceded, it follows that the state in the fulfillment of this obligation must satisfy itself beyond a shadow of doubt of the knowledge, skill and character of those whom it endorses and whose ability it guarantees * * * * Those who clamor so loudly for liberty should never forget that in the training of lawyers, dentists and doctors the public has a paramount interest." The medical profession cannot fail to take cog-

nizance of the rising tide of criticism against the so-called "self-anointed, insufficiently trained specialists, and the pseudo-specialists".

As the law now stands, any physician possessing a state license to practice medicine may undertake any legal type of medical or surgical work, or engage in any of the specialties his patient or his conscience will allow him to do.

Left to the natural course of events, years may pass before this glaring fault in our system of medical education is corrected. Medical policies are extremely conservative. It took seventy years before the American Medical Association won its fight to drive out the proprietary medical schools which all admitted were a blot on education.

Is it asking too much that the safeguards ordained for the protection of people in the thirteenth century be made the law of today? In the thirteenth century, Frederick the Second took notable steps to restrict the practice of surgery in order to safeguard his people. By his regulations, no one was permitted to practice surgery until he had had three years of logic, five years in the study of medicine, one year as an apprentice, and, in addition, at least one year of study in such branches of medicine as would qualify him to do surgery. Thus, in the thirteenth century, the laws made it impossible for one not thoroughly trained to practice surgery.

The time has now arrived when the medical schools should grant the graduate a degree of medicine which entitles him to apply to the State Board of Medical Examiners for a license to practice *general medicine* only, and the law should provide that *only* those who have been certified by the National Board of this particular specialty can apply for a license to practice this specialty.

I believe that it is the duty of this society to go on record as favoring the divorcement of general medical practice from the practice of a specialty and that our State Society take the proper steps to bring about these desired changes. Such a change in medical licensure is bound to come, forced by bad results in obstetrics, gynecology and surgery in the hands of those with inadequate study, training, and experience.

WHO OWNS THE RADIOGRAPH?*

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BATON ROUGE

If there is no difference between a commercial photographer and a radiologist, then the purpose of my paper is futile, but if the medical profession of Louisiana recognizes the radiologist as a consultant, then the reason for this presentation is obvious.

As a consultant, the radiologist is well fitted, for not only is he a graduate of a reputable medical college, with the necessary internship following, and has practiced general medicine for several years, but in addition has fitted himself for the specialty of radiology by special training.

In all consultations, each physician brings to the consultation room every bit of information pertinent to the case, information that he has acquired from many sources: the surgeon, experience and knowledge gained from many operations; the internist, mental bed-side notes from years of practice; the bacteriologist and pathologist with microscope and slides, and the radiologist with shadow box and x-ray films, together with information gained from the radiographic study of similar cases. All of these physicians play an important part in the consultation for the ultimate good of the patient, but the only one who is called upon to deliver the means by which he has arrived at a diagnosis is the radiologist. The patient feels that he has paid for a picture, not an opinion, and therefore is entitled to the radiograph.

This idea is rather general, and to correct this impression, with the sole thought of protecting the patient, this paper is presented with the hope that a frank discussion will completely clarify the situation in the minds of everyone.

Norman Prince, in his second edition of *Roentgen Technic (Diagnostic)* published in 1918, very clearly reviews the situation in the following words: "Plates should never be allowed to leave the office permanently and not even temporarily unless it is well understood

that they will be returned in a short time. They are the only absolute record that the roentgenologist has, and if lost sight of, he is greatly handicapped in various ways. X-ray plates are very frequently of great importance in legal matters. Instances may come up in which they will be of utmost importance, although little or nothing was considered at the time of the examination. They not only materially affect financial matters, but reputations, professional ability, false accusations, and numerous other things may in time rest wholly on the findings depicted in the roentgenogram. The roentgenologist is continually being approached by patients demanding that the plates be delivered to them, for as they say, 'I paid for them.' This can be refuted as it has been done in courts many times, by citing the fact that the fee paid was not for the *picture* but for the opinion the plate revealed, the plates being the roentgenologist's manner of obtaining his knowledge of the case. It is just as reasonable to ask an internist for his case record of a particular individual, giving all his findings, both physical and chemical, as to ask the x-ray specialist for his record, the plate. When a man forms the habit of making a 'picture' for a patient, presenting him with the negative, he will be lowering himself professionally, putting himself in the class with the photographer, so that he need not be surprised when he is called upon some day to make an appointment for 'a sitting.' "

It is obvious that the best interests of everyone are conserved by the retention of the radiograph by the radiologist, but it might be well to tabulate in logical sequence the reasons why the radiologist is the proper custodian of the films. Below I have briefly sketched the main advantages:

1. When kept by the radiologist, the films are carefully filed in numerical order in a steel fire-proof cabinet, protected from fire, moisture and dust. This manner of filing insures easy accessibility for reference.

2. There is the opportunity of comparing a particular film with others of a similar nature, giving an added knowledge to the study of the case in question.

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3. In the event of a consultation all physicians have the opportunity of viewing the films with the radiologist. In the event of the death or removal of the referring physician, the patient's succeeding physician is enabled to review the findings with the radiographs.

4. Should there be legal proceedings in any case that has been x-rayed, it is of vital import that the radiographs should be easily available for the protection of the patient. Now should the referring physician be involved in a malpractice suit, the presentation of the radiograph showing that his treatment was along proper lines, might be the sole means of preventing an unfavorable decision.

So far as I have been able to learn, there are only four cases in which the courts have passed upon the question of the ownership of the radiograph as between the patient and the physician-radiologist. The first case was decided in Massachusetts, and the other cases were decided by Michigan courts, the latest being from the Supreme Court of the latter state. In each instance, the court's ruling sustained the right of the physician-radiologist to retain the roentgenogram.

The earliest case in which this question was passed upon was in the State of Massachusetts in 1927, (*Whipple vs. Grandchamp*, 158 N. E. 270). In this case the Supreme Judicial Court of Massachusetts, in rendering its decision upholding the right of the physician said: "There was undisputed evidence, that x-rays taken in the hospital laboratory, as these rays were, are considered hospital property; that they are not taken except on the order of the physician or surgeon; that the x-ray pictures themselves are indexed, and numbered as a part of the hospital records; that, from the pictures, the radiologist makes findings in writing, which are a part of the x-ray laboratory and are held there as part of the records of the hospital."

The next case in which this question was passed upon was in *Hurley Hospital vs. Gage*, decided on April 21, 1931, by the Circuit Court of Genesee County, Michigan, on an appeal from a justice court. The basis of the suit was a claim for services rendered to the defendant by the plaintiff hospital in taking a radiograph of the defendant, who refused to pay the

bill for such services because of the hospital's refusal to deliver the radiograph to him in compliance with his request for it. The Circuit Court reversed the judgment of the justice court in favor of the patient, and ruled in favor of the hospital. In rendering its decision, the Court emphasized that the patient paid for an opinion of the roentgenogram based on the knowledge and experience of the radiologist, and not for the material that formed the roentgenogram. The Court further pointed out that the protection of the hospital might depend largely on the proper preservation of the roentgenogram and that the hospital should keep the films.

The next case, entitled *Throcker vs. Barnum and Pinkham*, was decided by the Circuit Court of Ingham County, Michigan, on April 4, 1932. In this case the patient had brought an action against her doctors to replevy certain roentgenograms that they had taken of her. The Court directed a verdict in favor of the defendant doctors, and in the course of its charge to the jury stated: "The undisputed evidence in this case is to the effect that it is customary that such films be retained by the physician who has taken them,—retained by him as a part of his record concerning the case; retained, I suppose, on the same basis and on the same theory that he retains his temperature chart that he has made or other record concerning the diagnosis or treatment of a case."

The last and most important decision was handed down by the Supreme Court of the State of Michigan in June 1935 in the case of *McGarry vs. J. A. Mercier Co.* The issue in this case was the same as in the *Hurley Hospital* case and the Supreme Court held in affirming the judgment of the lower court that, in the absence of an agreement to the contrary, x-ray negatives are the property of the physician or surgeon who has made them incident to the treatment of the patient, notwithstanding the cost thereof has been charged to the patient or to the one who engaged the physician or surgeon, as part of professional services rendered. I quote at length from the excellent opinion written by the Court in this case: "... Further, plaintiff was fully justified in refusing to surrender possession of the x-ray nega-

tives. In the absence of agreement to the contrary, such negatives are the property of the physician or surgeon who has made them incident to treating a patient. It is a matter of common knowledge that x-ray negatives are practically meaningless to the ordinary layman. But their retention by the physician or surgeon constitutes an important part of his clinical record in the particular case, and, in the aggregate, these negatives may embody and preserve much of value incident to a physician's or surgeon's experience. They are as much a part of the history of a case as any other case record made by a physician or surgeon. In a sense they differ little, if at all, from microscopic slides of tissue made in the course of diagnosis or treating a patient, but it would hardly be claimed that such slides were the property of the patient. Also in the event of a malpractice suit against a physician or surgeon, the x-ray negatives which he has caused to be taken and preserved incident to treating the patient might often constitute the unimpeachable evidence which would fully justify the treatment of which the patient was complaining. In the absence of an agreement to the contrary there is very good reason for holding that x-rays are the property of the physician or surgeon rather than of the patient or party who employed such physician or surgeon, notwithstanding the cost of taking the x-rays was charged to the patient or to the one who engaged the physician or surgeon as a part of the professional service rendered. Careful research indicates that the question here presented is one of the first impression. While not fully to the point, it has been indicated by court decisions that the negative of an ordinary photograph, in the absence of an agreement otherwise, belongs to the operating photographer, though his use thereof may be restricted. *Collis v. E. W. Walker Co.*, 64 Fed. 280; *Pollard v. Photographic Company*, 40 Ch. Div. 345."

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SOME UROLOGICAL PROBLEMS IN GENERAL PRACTICE*

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and

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The complexities arising out of recent advances in the treatment of certain urologic ailments make it difficult for the specialist to present clearly a subject such as this before a group of physicians engaged in general practice. Yet it is because of these complexities that it is most necessary for us to pool our interests and establish as clearly as possible some common ground for mutual understanding.

While the patient must be given full advantage of the modern trends in therapy, which seem superior to the older modes of treatment, one must avoid being led too far afield. It is no easy problem to say just how far the family physician should proceed with a given genito-urinary patient before asking the opinion of a specialist that might prove of benefit. In an effort to clarify some aspects of the commoner urologic problems, this paper is presented.

PYELONEPHRITIS

Many years ago, Keyes remarked that "the diagnosis of renal infection depends more upon arousing the suspicions of the medical examiner to the fact that the patient may have a renal infection than upon anything else. Once renal infection is suspected, it can readily enough be diagnosed."

Cabot states that "most of our errors in the diagnosis of renal infections come from not suspecting them or in not making a sufficiently thorough investigation." About 5 per cent of the cases admitted to the Southern Baptist Hos-

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pital are found to have infections of the kidneys.

The three cardinal signs of pyelonephritis are: pain, fever and pyuria. Pain is a most variable symptom, for it may be experienced directly in the affected kidney, or, it may diffuse to other parts of the abdomen, the groin, or the genitals. In many of the cases, tenderness in the affected kidney region will be elicited upon superficial pressure, while in other cases, only by deep palpation will this tenderness be elicited. We believe that careful bimanual palpation of the kidney should be resorted to more often than it is when the patient is extremely ill. It is not easy, in all instances, to differentiate right-sided pyelonephritis from ureter calculus or appendicitis and it must be remembered that any two of these conditions may occur simultaneously. Fever presents no regular course; it may be altogether absent in chronic renal infection, or intermittent, or of so transitory a character as to escape the patient's observation. In acute pyelonephritis, it is invariably one of the first signs that directs the clinician's attention toward the possibility of renal infection. We find that it is worth while to re-emphasize the necessity of collecting only catheterized specimens of urine for stained microscopic smears. The organisms most commonly found in the urines with renal infection are colon bacillus, micrococcus, *Streptococcus fecalis*, *Aerobacter aerogenes*, *Proteus ammoniae* and *Staphylococcus*. Tuberculous infections will not be included in this discussion.

Obviously, renal illnesses, other than pyelonephritis, may give almost similar gross findings. Calculus or tumor shows red blood cells in variable amounts; in hyper-acute, infective conditions of the pelvis of the kidney, blood cells are also found in the urine. An x-ray film, in every case, will reveal many silent calculi.

It should not be necessary to stress the importance of complete rest in bed where the fever is high and the patient most uncomfortable. A moderate quantity of fluid by mouth, where tolerated, assists greatly in eliminating the toxins as they form in the kidney. Where nausea is a factor, intravenous fluids are indi-

cated. Just how much fluid these patients should receive is still under debate. Some authorities claim that it is necessary for them to receive 2,000 to 3,000 c.c. of water daily; conservative workers, however, feel that such an enormous quantity of fluid might be an additional burden on an already embarrassed organ. The quantity of fluids administered in these cases has a direct relationship to the oral or intravenous administration of urinary antiseptics. It is clearly evident that where a drug is prescribed to retard bacterial growth in the urine, such an agent will work better in a concentrated media than in a diluted one. Every practitioner today has his pet urinary antiseptic which he feels is superior to all others. In contrast to those enthusiastic about this form of therapy, one of our leading authorities in this field says that oral medication simply keeps ambitious or mechanical doctors from instrumenting their patients. Of the many urinary antiseptics now in use, proponents for each one of them make claims for superiority; one group of antiseptics is supposed to act more effectively against bacilli; while another group is supposed to be more effective in coccal infections. The work by Clark on increasing the ketone bodies in the urine has focused our attention on the value of keeping the pH of the urine low; this applies particularly in combatting bacillary infections. However, the ketogenic diet has found little favor, either among clinicians, or the patients, for obvious reasons. The acid ash diet has almost superseded the one advocated by Clark. For results by diet, the patient must be hospitalized. Many substitute ammonium nitrate for the special diets to reduce the pH of the urine; it often works equally well.

The administration of beta-hydroxybutyric acid produces satisfactory ketosis, and this drug has the added advantage in that it can be applied locally with satisfactory results; it is difficult to obtain, however, in pure state. Mandelic acid is all the rage at the present moment. It seems most effective in the form of ammonium mandelate, for here the additional acid medications can be dispensed with. At the present, mandelic acid is marketed in very unpalatable forms. Unquestionably, this dis-

advantage will be amended in time. The high cost of this drug prevents its wide application. Attention must be called to the fact that the administration of mandelic acid is not altogether without danger. Nausea and vomiting; giddiness, buzzing in the ears or temporary deafness; diarrhea; casts, albumin and blood in urine; severe pain in muscles of neck, arms and legs; skin eruption and rashes; edema in extremities—these are some of the toxic manifestations that have been reported to the writers, but which disappeared when the drug was discontinued. Mandelic acid is contraindicated where marked reduction in renal function is demonstrated. It should be given with the utmost care in children. Under the best of auspices, one should never prescribe a quantity to last longer than two weeks.

Finally, it should be pointed out that kidney infections might be divided under two heads, namely: (a) the complicated cases, and, (b) the uncomplicated cases. The complicated case is one in which some factor other than the infecting organism perpetuates the ailment; this is usually some obstructive factor at or below the level of the kidney. Where such an obstruction perpetuates a stasis in the kidney pelvis, non-surgical treatment will not always avail. It is in the uncomplicated lesions of the kidney that response to drugs is to be anticipated. We would, therefore, suggest this rule: that where the case does not respond to adequate medication within a reasonable period, say two weeks, that the services of a urologic consultant be solicited.

HEMATURIA

The passing of blood in the urine of a patient of any age is an alarming symptom and the source of such bleeding should be determined at the earliest possible moment. It is frequently the only evidence of a tumor somewhere in the urinary tract and in the majority of instances is not accompanied by pain.

In a tabulation made by the Carcinoma Registry of the American Urological Association it was shown that out of 508 cases of bladder tumor with initial hematuria only about one-half were diagnosed in the first year, almost 20 per cent had to wait three years for a diagnosis, and 26 cases were not actually

diagnosed for seven years or more.

Cabot says—"that hematuria calls for cystoscopy is a matter of elementary knowledge. Only the despairing habit of mind born of the evil results of incompetent bladder surgery can explain—while nothing can excuse—such a state of affairs." When we consider the fact that the vast majority of tumors in the urinary tract are malignant and that the only hope of cure lies in early recognition and treatment, it should be apparent to all that hematuria is never a symptom to be taken lightly. If there is one symptom in urinary diseases where prompt consultation with a urologist is urgently demanded, it is in patients complaining of hematuria. It is a fact beyond all peradventure of doubt that cancer among our people is on the increase and we are firmly convinced that cancer in the genito-urinary tract is becoming more prevalent.

Hematuria occurs also commonly in patients with urinary calculus and in many inflammatory processes either of recent or long standing. However, in these latter conditions in many instances bleeding is not profuse; not infrequently it is found only upon microscopic examination of urinary sediment. Bleeding from a new growth, on the other hand, is usually most active, the urine frequently resembling blood itself. The incidents of these hemorrhages is variable. The initial hemorrhage often occurs after a fall or trauma to the affected part, after which the patient may have a profusely bloody urination; following this he may void clear urine for weeks, for months, or for years, without having another hematuria.

We wish to reiterate the point that these attacks of hematuria are mostly painless. In 1917, one of us presented a paper before this Society on the clinical significance of hematuria, in which it was stated that a study of a series of 74 cases demonstrated the fact that hematuria was a symptom of a new growth somewhere in the urinary tract in 50 per cent, and, furthermore, that 72 per cent of the tumors found were malignant. In this series the hematuria was due to carcinoma of the prostate in seven; there were five cases with renal tuberculosis; there were thirteen cases of urinary calculus. The figures in the above

mentioned analysis tally fairly well with the reports of others appearing in medical literature.

Essential hematuria, a term discarded from urological nomenclature during the past decade as being unscientific, has been honorably reinstated to designate those renal hemorrhages for which no gross pathology in the kidney can be demonstrated. Such bleedings can prove most fractious. Recently Watkins and Thompson have reported excellent results in this condition by the administration of moccasin venom subcutaneously. It controlled the hematuria in an average of two weeks' treatment in a series of patients who bled for an average of four years. These observations are noteworthy.

CYSTITIS

So-called "inflammations of the bladder", bring many patients to the practitioner seeking relief because of painful, frequent and urgent urinations. In many instances we recognize today that "cystitis" is very often secondary to a primary source of infection in some contiguous structure, such as the kidneys, the ureter, the prostate, seminal vesicles and the urethra. These possibilities must ever be borne in mind when, upon microscopic examination, the catheterized urine sediment shows pus and bacteria. Primary cystitis does occur and its origin often is most obscure. The same strains of bacteria that were enumerated in our discussion of pyelonephritis are also the main invaders here.

As regards the opinion long held by many that bladder infections are commonly produced by catheterization seems now to have been discredited. The intact bladder mucosa is very resistant to infection and it is usually necessary for a foreign body actually to abrade the surface of this inner coating of the bladder before bacteria can get a foot-hold. Many years of observations made in the urologic wards of several large hospitals bring us to this conclusion. It would seem most rational that lymphatic extension of infection from affected areas in structures adjacent to the bladder might, under circumstances of lowered resistance, produce cystitis.

Allergy as a cause of cystitis has been brought to our attention most forcefully during recent years; a relatively common food idiosyncrasy, that we have observed in producing bladder irritability, is tomato juice. Cases of strawberry cystitis have also come under our observation.

The various chemical cystitis cases are well known. There is one relatively common cause for bladder irritability in women that is not commonly recognized and that is urethral stricture. Every year we see at least a score of women who have been the rounds, attempting to get relief and who, upon repeated occasions, revealed an absolutely normal urine, no foci of infection elsewhere were found, nor were there any signs of extra-vesical pressure or irritation. Allergy seemed not to enter here. These women had to get up five or six times nightly to void and urinated as often as every hour during the day. One to three dilations of the urethra up to 24 F., or to 30 F., gave prompt relief.

Certainly conservative treatment, directed at an ailment suspected as being a "cystitis", should not be extended over a period of two weeks without obtaining tangible results. Where the urine continues to show pus and bacteria, after a series of weak silver nitrate solution instillations, weak postassium permanganate solution irrigations and the administration of some oral urinary antiseptic, cystoscopic consultation should be recommended to the patient.

URINARY RETENTION

Apart from urethral stricture, the foremost cause of difficulty in voiding among aged male patients is benign hypertrophy of the prostate of the adenoma type, the cause of which is indeterminate apart from the fact that a neglected chronic prostatitis and an active sexual life are believed by many as having a bearing on this type of obstruction. The neoplastic theory has been largely abandoned because of the structural elements. Three forms of prostaticism are recognized: (1) glandular, (2) fibromuscular, and (3) mixed forms. Leiomyomata of the prostate arising from the smooth muscles are usually from the musculature of the internal sphincter and become intimately associated with the prostate. These are usually of no importance except clinically.

Carcinoma of the prostate produces fully 25 per cent of all urinary obstructions and may develop in any of the gland structures. Since they arise in the posterior portion of the gland they are diagnosed readily at rectal palpation by their characteristic stony hardness. Sarcoma produces so small a proportion of these obstructions, the ratio being about one case in every six thousand, that they hardly need be considered. We are all cognizant of the effects of lower tract obstruction in the urinary system. The act of micturition may be markedly interfered with even where small median lobe enlargements occur, for these, at times, produce as much bladder pathology as a type IV lateral lobe encroachment. As the enlargement increases, the muscle bundles of the bladder become more thickened, and, when the combined muscular action of both the trigonal and vesical muscles fails to empty the viscus, we then have residual urine. With reduced working capacity, the patient voids more frequently, followed by a loss of tone in the musculature, finally resulting in trabeculation and diverticuli. This process gradually increases in its intensity until there is observed a dilatation of ureters, pelvis, infundibula, and calyces. Finally the renal cortex becomes thinned out and impairment of renal function results. Urinary reflux may be so great at times that an ordinary cystogram study will result in a bilateral pyelogram. The symptomatology is variable and often not in proportion to the real pathology present. Early in the process the patient's only complaint may be that he has noticed a gradual enlargement of the abdomen. This increases to difficulty in voiding, and if the urine remains uninfected there is little discomfort.

If residual urine and infection develop, calculi frequently form in the bladder, which adds additional suffering to the already uncomfortable patient. He begins to arise at night from one to six times and there is a hesitancy in starting the stream or the stream will start, and stop, several times during micturition. There is a general feeling of fatigue and loss of appetite, headaches and slight nausea. If this progresses to a more marked stage, definite uremia will develop which at times may prove

fatal. Some cases give no symptoms other than slight hemorrhages which occur from the dilated structures above the site of obstruction. Strictures of the urethra produce much more damage to the upper urinary tract, in a shorter period of time, than bladder neck obstruction. They repair very much less rapidly and leave the patient with a greater loss of normal physiological processes.

The symptoms of urethral and bladder neck obstruction may be summed up under a few headings: (1) vesical, (2) renal, and (3) cardiac. No type of case requires a more careful examination, with special emphasis as to:

1. Catheterization, for residual.
2. Urinalysis.
3. Rectal examination.
4. Kidney functional determination.
5. Complete blood chemistry.
6. Internal bladder neck examination.
7. K. U. B. and roentgen ray of chest.
8. Cardiovascular system study.

The one purpose is to relieve the obstruction. If stricture is found, dilate gradually to a 30 F. caliber and follow-up with bi-annual examinations thereafter.

We do not believe the choice of procedure in prostatic obstruction is optional. Our method of choice is transurethral resection in the relatively small growths and prostatectomy in massive enlargements. Where malignancy is encountered resection plus large doses of deep roentgen ray are given. This we believe to be the least embarrassing to the patient and produces most lasting benefit.

ACCESSIBLE UROGENITAL NEWGROWTHS

Newgrowths of the urogenital system, accessible and recognized easily without instrumental help occur more commonly than is generally supposed. In the male, the most frequent by far are the so-called venereal warts or verruca acuminata. These are potentially malignant lesions and are usually found back of the corona and practically always occur in individuals who have not been circumcized. However, this is not always so. We have had cases in which the verruca were on the body of the penis midway between the corona and base of the penis. They are readily destroyed by fulguration. Of the true malignant tumors, carcinoma of the penis

is the most common. Wolbarst states they represent 2 per cent of all carcinomata found in man; there is a definite age frequency of from forty to sixty years; they are most common in individuals with long foreskins. This type of growth is usually squamous cell epithelioma of the epidermoid type. The fibrous coverings of the corpora prevent early extension. Metastases spread through the inguinal lymph nodes and nearly always the glands are palpable when the lesion is brought to the attention of the physician, representing itself in a small, ulcerated area of papillary growth. The diagnosis is made only by scrapings submitted to histologic examination by a competent pathologist. It is quite important to know the grade of malignancy in order to outline a method of treatment. Nesbit is of the opinion all cases should be subjected to amputation, this to be followed by radiation.

In the female, urethral caruncle often produces distressing symptoms and should be promptly destroyed by fulguration, because 40 per cent of them are either cancer or potentially malignant processes.

Tumors of the testicle have attracted much interest in the last few years due to their seriousness; promptness of diagnosis and treatment mean everything as regards ultimate future of these unfortunate patients. There is still considerable dispute as to the pathogenesis of these tumors; the reason for this uncertainty is due to their infrequent occurrence. They do not occur with any more frequency in undescended testes than in those that have reached their normal bed. Embryonal tumors are most common, occurring in 85 per cent of all cases operated upon; next in frequency are the teratomas, representing 12 per cent of all cases; the remaining 3 per cent comprising miscellaneous tumors. Recently, considerable work has been done as to whether these tumors gave off a corresponding hormone. Most of the embryonal tumors do secrete a hormone similar to that of a pregnant woman of four or five months. The symptoms as a rule are gradual in onset, the testicle enlarging without pain, most patients giving a history of trauma which is of only secondary consequence, as the tumor may have been present for as long as three or

four years before the patient seeks medical advice. Most clinicians rely on palpation, to a more or less degree, in making the diagnosis. The testis is usually smooth, slightly more firm than normal, nodules and irregularities occur late; even then there is no pain or pressure. The differential diagnosis may be confused with gumma, tuberculosis, epididymitis, or orchitis. These tumors metastasize readily to the retroperitoneal lymph glands and to all organs. However, it is most frequently seen in the lungs and is best found by a plain film of the chest.

The treatment is operative, followed by radiation; some of these tumors are very radiosensitive, others mildly so, and a certain per cent are very resistant. The recovery of these individuals is in direct relation to the degree of malignancy, and whether it be radiosensitive or radioresistant.

CONCLUSIONS

1. In uncomplicated cases of pyelonephritis, rest in bed, establishing adequate elimination and the oral administration of suitable medication for the specific infectious organism in question will often suffice. Where relief is not forthcoming promptly under such a plan, instrumental investigation and therapy is indicated.

2. Every hematuria should be subjected to cystoscopic study promptly as bloody urine is commonly the only symptom of malignant growth somewhere in the urogenital tract.

3. Cystitis is often a symptom of a lesion in some structure contiguous to the bladder as the prostate or kidneys. Urethral stricture often simulates cystitis. Food allergy as a cause of bladder irritation must be remembered.

4. The extent of pathologic enlargement of the prostate cannot always be demonstrated by rectal palpation; the degree of intravesical encroachment is determined only by cystoscopic study. Extensive hypertrophies are best relieved by prostatectomy; for small lobes, bars or in carcinoma, transurethral prostatic resection is ideal.

5. Venereal warts and caruncles on the external genitals must be regarded as potentially malignant lesions and demand prompt destruction by fulguration. Cancer of the penis and testis calls for radical measures.

DISCUSSION

Dr. H. J. Lindner (New Orleans): It is unfortunate that Dr. Walther had to rush such an important paper. I just want to stress one point in regard to urologic investigation. I feel that here is too much procrastination, or lack of realization, as to the underlying pathology of these urologic conditions on the part of the general practitioner, who allows these patients to go on for too long a time before they are subjected to a thorough urologic investigation.

This is particularly true in chronic obstructive infections of the kidney due to renal calculi obstructions in the ureter. We see so many of these individuals who go on, having vague symptoms, it is true, for periods from over a year to five or more years. These cases have gone on, visiting one or several doctors, being treated for cystitis with urinary antiseptics. When the urologist sees these cases, the underlying pathology is pyonephrosis, chronic pyelonephritis or hydronephrosis due to renal calculi, urethral calculi, kinks of the ureter, stricture of the ureter, and obstruction due to abnormalities, and it is then necessary, owing to the destruction of the kidney, to do a nephrectomy, whereas, if these individuals were subjected, at their first call on the doctor, to a thorough urologic investigation, in a large percentage of these cases the individual would still have a good sound kidney.

Another point: it does seem remarkable at this age of scientific medicine, that such carelessness in examination of patients should exist as shown by the report of the Carcinoma Registry of the American Urological Association as to hematuria. When one is shown a record of over 500 cases in which hematuria was the initial symptom, and that in the first year only 50 per cent should be diagnosed, and that 20 per cent should go on for three to four years before cystoscopic or urological investigation, certainly something should be done to educate both the doctor and the layman as to the seriousness of these conditions.

METABOLIC DISEASES OF THE NERVOUS SYSTEM*

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NEW ORLEANS

The fact that nutritional deficiency, or avitaminosis, may cause organic diseases of the nervous system in man, as well as in experimental animals, has been known for a long time. How-

ever, until recently, the only conditions referred to a metabolic factor in human pathology, were pellagra, a characteristic skin condition, often combined with an acute psychosis, and beriberi, or avitaminotic polyneuritis, the former supposed to be due to avitaminosis B₂ the latter to vitamin B₁ deficiency.

BERIBERI IN THE SOUTH

Beriberi, primarily described as an endemic disease of the far East, has been observed in the southern part of this country, too, and particularly in Louisiana. I am quoting Scott and Herrmann, who wrote, in 1928: "So far as we are aware, no deaths (from beriberi) prior to 1921 were reported for Louisiana. In fact, only five have ever been recorded at the state bureau of vital statistics, and those in the years of 1922, 1923 and 1926. In 1927 there were two cases at the Charity Hospital, New Orleans, and one in the parish prison, though they seem not to have been reported as beriberi.

"So far as we are aware, Young was the first to report the occurrence of beriberi in Louisiana. We assume that the rice industry was then only in its infancy, presumably having begun late in the eighties of the last century. Young reported that he had seen 40 cases between 1898-1903, but knew of a large number of others coming under the observation of a colleague in Abbeville, the parish seat of Vermilion Parish.

"In 1921 Dr. C. W. Lewis of Eunice, La., in St. Landry parish, directed the attention of the state board of health to a large number of cases of beriberi in his district. An investigation was carried out by one of us and a condensed report was published. Two years later, in 1923, Lewis again drew our attention to an outbreak and this also was investigated thoroughly. Since this time, beriberi has been reported from a number of other parishes.

"By a happy coincidence, just as our interest was aroused in this outbreak, we were accorded the privilege of studying a group of patients with prison beriberi. The latter outbreak appeared in the parish prison in September and October, 1927, and was attributed to a definitely faulty diet in which, however, rice did not play any part whatever.

*Read before the Orleans Parish Medical Society, February 22, 1937.

†From the Louisiana State University Medical Center, and Charity Hospital, New Orleans.

"The previous prison fare, according to the prisoners, had consisted of a stew of salt pork or beef and boiled hard cowpeas or beans or carrots and soup and white bread, molasses and water. Milk, fresh vegetables or fruits were not served. The prison fare was sufficient in amount, but monotonous and definitely without vitamins, since the legumes were so hard that they were not eaten.

"Not a single case of beriberi developed among those prisoners who received food from relatives and friends on the outside.

"There were 10 cases in the parish prison besides the four true cases of beriberi received at the Charity Hospital."

It is probable that the report of Scott and Herrmann was responsible for an improvement of diet in the New Orleans Parish Prison, since, between 1927 and our time, no other outbreak of endemic beriberi in that prison has been reported. However, there is under my observation one case of true beriberi of a colored man, who developed that disease during a six months' stay in the New Orleans Parish Prison. It was a rather serious case, with edema and myocardial involvement, and the patient still has not recovered, though he is considerably improved.

In 1927, Scott and Herrmann realized from their own experiences that the former theory, according to which beriberi was due only to a diet of polished rice, had to be abandoned. Vitamin B₁ is found, as we know today, in tomatoes, beans, cabbage and fresh spinach, and every diet deficient in those vegetables may cause beriberi. However, recent investigations seem to have enlarged considerably the number of possible etiologic factors, even beyond any dietary deficiency whatsoever. Early as well as recent observations gave evidence of occurrence of acute or subacute multiple neuritis of the beriberi type in different gastrointestinal conditions, like occlusion of the common bile duct, unspecific gastroenteritis, ulcerative colitis, cancer, benign achlorhydria, postoperative vomiting, and after different kinds of operations on the gastrointestinal tract. These well-established facts (see Winans and Perry, Christopher, Pas-kind and Snorf, J. M. Barnes, Urmy, Eagle, Allen and Jones, O. C. Perkins et al.) can be interpreted in two ways: It may be that the serious trouble of absorption caused by gastro-

intestinal disease involves deficient absorption of vitamins, so that we would have to consider those conditions as true avitaminoses; or, on the other hand, it is possible that we are dealing, in those cases, with starving processes, directly caused by lack of foodstuff or inability to digest it. Pathologic changes in the peripheral nerves due to experimental starvation have been proved to be quite similar to those from vitamin B deficiency. Both interpretations may be true. In addition to that, we have to face the fact that avitaminosis B itself mostly causes severe gastrointestinal trouble, so that a vicious circle will develop.

In accordance with those facts, puerperal polyneuritis, which mostly occurs together with or after pernicious vomiting, could be explained on the line of avitaminosis, too. For the minority of cases of puerperal polyneuritis without pernicious vomiting the explanation was possible that due to the increased need for vitamins in pregnancy, both for the mother and the fetus, a relative avitaminosis might easily arise, even with an average diet, particularly when the latter contained increased amounts of carbohydrates together with only average amounts of vitamins. It seems that the vitamin B requirement increases with the carbohydrate content of the food (Vorhaus, Williams and Waterman).

ALCOHOLIC POLYNEURITIS

Another important step toward enlargement of the conception of avitaminotic diseases was done when, in 1930, Wechsler proffered the idea that many, if not all, of the cases of so-called alcoholic polyneuritis might be due to vitamin deficiency. Wechsler's theory has, since that time, been almost brought to evidence by other observers. Strauss treated two equal cases of alcoholic polyneuritis with high vitamin diet, one group being kept without alcoholic drinks whereas the patients of the other group were given the same amounts and kinds of drinks they used to drink before. Both groups recovered in the same time. The symptoms of beriberi and those of alcoholic polyneuritis are scarcely different from each other. Several explanations for the avitaminotic origin of alcoholic polyneuritis offered themselves: (1) the fact that many chronic alcoholics do not care for eating at all, the less since a considerable part of their caloric requirement is supplied by

alcohol itself; (2) that alcoholic polyneuritis be secondary to the chronic gastrointestinal disturbance found in alcoholism, particularly to achlorhydria which is frequent; (3) that a relative avitaminosis develops due to the additional supply of calories contained in alcohol. Again it may be stated that all three of those explanations may be true.

When I first started neuropsychiatric work in New Orleans, in January 1935, I soon was struck by the exceeding frequency of cases of polyneuritis, with or without acute mental disturbance, and with or without history of alcoholism. The therapeutic test, showing excellent results of high vitamin diet in practically all cases, was entirely in favor of Wechsler's ideas, as far as alcoholic cases were concerned. In addition, I found that acute psychoses, states of delirium, Korsakoff's syndrome, hallucinosis, regardless whether being alcoholic in origin or not, seemed to react even faster to high vitamin diet than the peripheral disease. This held also in cases of acute psychosis without polyneuritis, as, e. g., in a case of acute stupor of an entirely catatonic type which might have been considered as schizophrenia with an acute onset, but which cleared up within several days when the vitamin supply was increased. The same was true with cases of pellagra psychosis. According to those experiences, the conditions of alcoholic polyneuritis, acute alcoholic psychosis (delirium or hallucinosis), Korsakoff's syndrome, toxic psychosis with or without gastrointestinal origin, polyneuritis from gastrointestinal disturbances or without any known etiology whatever, and pellagic psychosis, everyone of them hitherto being considered as a nosologic entity by itself, seemed to melt into one another forming one large group of peripheral and cerebral conditions which, though possibly very different as to particulars of their pathology, had one factor in common: an underlying metabolic disturbance, be it plain avitaminosis, gastrointestinal disturbance, pregnancy, alcoholism, starvation or some other unknown metabolic pathology. In order to get somewhere, I had to abandon, at least in practice, the idea of an entirely specific action of different vitamins. Incidentally, this idea has been considerably shattered already by recent experimental research. It is known that neurologic and psychiatric

troubles can be related to different vitamins of the B group, to the A vitamin (Mellanby) and perhaps even to vitamin C. All of them are to be considered as chemical catalysts which, though different from one another, nevertheless are intimately cooperating in their stimulating influence on the metabolism of the nervous system. Asphyxia or partial starvation atrophy of nerve cells and fibers probably can be brought on in most different ways. The result will be similar, though not identical, partly due to immediate damage done to the nerve tissue, partly to its decreased resistance against poisons like alcohol, or autotoxins.

FUNICULAR MYELITIS

Certain observations led me to believe that, in addition to peripheral and cerebral conditions, most of them already well known in that respect, there might be cases with spinal localization, too, belonging to the group of metabolic diseases. I saw cases of combined tract disease, or funicular myelitis, much more frequent here than somewhere else. The condition is characterized, as you know, by a combination of pyramidal tract and posterior tract symptoms and is due to pathology of those tracts. It is supposed to occur most frequently in pernicious anemia. It may, clinically, look like a tabes dorsalis, but with a positive Babinski's sign, or it may present a spastic paraplegia together with ataxia and impairment of deep sensibility. I observed that among four cases of that kind with no evidence whatever of luetic origin, there were no signs of pernicious anemia either. Moderate secondary anemia together with hypacidity or anacidity of the gastric content was more frequent. Then, obviously, pernicious anemia could not be the most frequent cause of that disease, but possibly a coordinated symptom, like achlorhydria. Recently, pernicious anemia and achlorhydria have been brought in some connection to avitaminoses, both supposed to be due to deficiency of the "liver factor." There was no difficulty whatever in generalizing that idea and considering combined tract disease, whether or not combined with pernicious anemia and achlorhydria, as a metabolic deficiency condition. The result of treatment based on that hypothesis, proved entirely satisfactory. I never saw such excellent results of treatment of com-

bined tract disease, as I saw after administration of high vitamin diet, together with liver extract. The following case may be quoted:

CASE REPORT

A. F., aged 52, a white female, was admitted to Charity Hospital on October 1, 1936. She had complained for the past three years of a gradual loss of strength in her lower extremities, together with numbness and loss of sensation. She never was suffering from pains. During the past three months the patient could not walk at all. Her appetite is good. There are no gastrointestinal troubles. She denies use of alcohol and venereal disease. No considerable loss of weight has been observed. The physical examination shows: skull, pupils and cranial nerves all normal but for an irregular horizontal nystagmus of average speed toward both sides, with its slow component inward. She has been hard of hearing since childhood. Normal findings in upper extremities. Lower extremities show considerable hypotonia. The active movements are normal, with adequate strength. There is severe locomotor ataxia. Muscle and joint sensibility are abolished, skin sensibility normal. Patellar and achilles reflexes are absent. Plantar reflexes positive and equal on both sides. Babinski's sign is positive on both sides, Oppenheim's sign positive on right. Patient is entirely unable to stand. Wassermann negative in blood and spinal fluid. Blood count shows moderate anemia of hypochromic type, no abnormal cells. Other spinal fluid findings normal. Gastric content: free acidity 20, total acidity 25. Improvement started a few days after treatment with high vitamin diet and liver extract was started and she improved. Four weeks after admission, patient is walking by herself, without any support, though ataxia still is to be noticed.

The surprising fact in cases of this kind is that a condition which started as early as three years ago and, since that time, became progressively worse, would turn into recovery immediately after the vitamin treatment had been started. Then, it obviously could not have been "degeneration" of fiber systems, as those conditions frequently have been called. There is no regeneration in the central nervous system. It seems that metabolic disturbance of tissues in the central nervous system may continue for years, and cause considerable disturbance of function, without necessarily producing degeneration. Naturally, not all cases are equally benign. Frequently, one may see some improvement immediately after the vitamin treatment has been started, and, after one or two weeks,

a standstill, without any progression or recovery, for indefinite time. Obviously, in those cases, part of the fiber systems already have degenerated, and improvement went as far as it possibly could go, re-establishing function of those nervous elements which had survived.

TRANSVERSE MYELITIS

This seems to hold, still more, for another group of spinal diseases which, as far as I can see, are to be considered as being of a similar kind, though up to now, clinicians do not seem to have noticed it. I mean those rather frequent cases of transverse myelitis of unknown origin, in which neither lues nor any definite focal infection can be brought to evidence. Of course, the idea, hitherto generally accepted, of some kryptogenic infection can hardly be refuted. However, it cannot be proved either. On the other hand, among my observations, there are five cases of that kind, three of which showed definite improvement after high vitamin diet had been introduced. In none of those cases, it is true, recovery can be reported. All of them showed that type of development, together with treatment, which I mentioned concerning certain cases of combined tract diseases: almost sudden improvement together with the beginning of high vitamin diet, followed by a standstill which kept on as long as observation was continued. Certainly, in cases of transverse myelitis we are dealing with another kind of pathology, possibly necrosis of vascular origin. Vascular changes, however, might easily be due to metabolic disturbance. Mellanby described spinal pathology in the experimental animal from vitamin A deficiency. According to his theory, vitamin A is, primarily, to be considered as the ergot-poisoning preventing factor, ergot being contained not only in claviceps purpurea, but in wheat embryos too, so that whenever that vitamin is deficient, every food containing flour might cause symptoms of ergotism. The fact that occlusion of blood vessels with consecutive gangrene plays an outstanding role in ergotism, is well known. If, then, Mellanby's observations are true, necrosis of the spinal cord of vascular origin may easily be due to vitamin A deficiency. Of course, concurrence of different etiologic factors is never to be excluded; therefore, infection may be in question, too,

in every case of that kind, which, by the way, even holds for beriberi. However, the role of infection is perhaps not a specific one. It may, in some cases, only account for some metabolic change, like increased basal metabolic rate during fever and, together with that, for relative vitamin deficiency. On the other hand, the idea might not be out of the way that even in those cases with obviously infectious origin, luetic transverse myelitis for example, a metabolic factor is essential for the development of pathologic changes. At least, a therapeutic test along those lines certainly is justified.

CLASSIFICATION OF CASES

My material of observation consists of 47 cases, a summary of which is given in the following tables. As can be seen from table 1, 21 of them are considered alcoholic in origin, all but two presenting the usual alcoholic symp-

Table 1

CLASSIFICATION OF CASES

Acute psychosis	4
Acute psychosis with polyneuritis	1
Polyneuritis	6
Beriberi	2
Pellagra psychosis	1
Pellagra polyneuritis	1
Puerperal polyneuritis	1
Cachectic psychosis	1
Alcoholic hallucinosis	4
Alcoholic Korsakoff's syndrome	1
Alcoholic polyneuritis	9
Alcoholic delirium and polyneuritis	1
Alcoholic hallucinosis and polyneuritis	1
Alcoholic delirium, Korsakoff's syndrome and polyneuritis	1
Alcoholic Korsakoff's syndrome, polyneuritis and pellagra	1
Alcoholic hallucinosis, polyneuritis and pellagra	1
Alcoholic tranverse myelitis	2
Tranverse myelitis	4
Combined tract degeneration	3
Transverse myelitis and Korsakoff's syndrome	1
Combined tract and anterior horn degeneration	1
Total	47

toms of polyneuritis, delirium, hallucinosis, and Korsakoff's syndrome in various combinations, in two cases together with pellagric dermatitis. I added two cases of transverse myelitis, not because I am sure of their alcoholic origin, but

because that etiology certainly ought to be considered.

The etiology of the remaining 26 non-alcoholic cases may be seen from table 2. The largest group, 11 cases, is that of cases without any

Table 2
ETIOLOGY

	Gastrointestinal	Starvation	Cachexia	Puerperal	Acute Infection	Unknown	Total
Acute psychosis	1		1		2	1	5
Acute psychosis with polyneuritis	1						1
Polyneuritis	2			1	1	3	7
Beriberi		2					2
Pellagra psychosis		1					1
Pellagra polyneuritis	1						1
Transverse myelitis						3	3
Combined tract degeneration						3	3
Combined tract and anterior horn degeneration						1	1
Transverse myelitis with Korsakoff's syndrome	1						1
Total	6	3	1	1	3	11	25

known etiology. I am considering metabolic disturbance as an etiologic factor because the symptomatology is similar to cases brought to evidence by the case history. However, I do believe that too much stress ought not to be laid on the anamnesis concerning nutrition. On the one hand, the statements given by patients are rarely reliable. It requires more intelligence and interest in nourishment than most patients seem to have, in order to tell exactly how much fruit, fresh vegetables and butter have been consumed. On the other hand, even definite undernourishment which may be found out by loss of weight, does not necessarily mean metabolic deficiency in that sense in which the term is being used by us. There are many undernourished people without any nervous deficiency symptoms whatsoever, and it is true that we cannot account for that. The therapeutic test, consisting in definite improvement after vita-

min administration, certainly does not prove the condition to be caused by deficiency in vitamins; however, since we know that those vitamins concerned, mainly the B group and vitamin A, have definite influence on the metabolic processes of the nervous system, the conclusion seems to be justified that improvement by vitamin treatment is to be explained by some metabolic pathology, whatever it may be. It would be wrong to call it avitaminosis. It is better to speak of a neuro-metabolic crisis, which means: (1) that we are dealing with processes going on in the nervous system, with various localizations; (2) that metabolic derangement is one of the pathogenic factors, perhaps the most important one; (3) that the process has, primarily, the character of a crisis, i. e. of an acute or sub-acute disturbance which may end either in recovery or in an irreversible degenerative process. The metabolic derangement itself may be caused by starvation, by unbalanced diet, by deficiency of absorption due to gastrointestinal disease, or by an absolute or relative lack or surplus of catalysts required for nervous metabolism, the catalysts being supplied by vitamins on one hand, by endogenous hormones on the other. We probably are dealing with either cellular starvation or cellular asphyxia of the nervous tissue, which may or may not be accompanied by a general metabolic disturbance.

ETIOLOGY

It will be seen from table 2 that infection does not seem to play an important role among the causative factors. Formerly it has been believed to be the most important one in cases of polyneuritis, acute psychoses and myelitis, probably because infection was taken for granted whenever no other cause was found. Some bad teeth, infected tonsils, sinuses, or appendices were mostly at hand. Concerning the three cases with infectious etiology, some direct toxic or bacterial invasion of the nervous system does not seem altogether probable; rather it may be assumed that the increased basal metabolism in fever brought on a relative deficiency of catalysts, vitamins or hormones. Once the neuro-metabolic crisis is started, a vicious circle develops with gastrointestinal disturbances caused by the deficiency and, in turn, increasing the deficiency by lessening absorption.

An analysis of the gastric contents has been done, for technical reasons, in only 11 of the 47 cases. The acidity was found normal in three cases, increased in two, and decreased or almost absent in six cases. The incidence of hypochlorhydria in six out of 11 cases is not quite as high as might have been expected according to the experiences of other observers. However, it is still high enough to justify the belief that the function of the gastric glands plays an important role, either as a coordinated symptom, or as a causal factor, or as both.

TREATMENT

Table 3 gives the results of treatment and the final outcome in those 32 cases in which observation was long enough to allow judging.

TABLE 3

	Regular Diet Improved	Regular Diet Not Improved	High Vitamin Diet Improved	Deaths	Total
Acute psychosis	1		1		2
Acute psychosis with poly- neuritis			1		1
Polyneuritis			4		4
Beriberi			2		2
Pellagra psychosis				1	1
Pellagra polyneuritis	1				1
Puerperal polyneuritis			1		1
Alcoholic hallucinosis			2		2
Alcoholic Korsakoff's syn- drome			1		1
Alcoholic polyneuritis	1	2	2	1	6
Alcoholic hallucinosis with polyneuritis			1		1
Alcoholic delirium, Korsa- koff, polyneuritis					1
Alcoholic Korsakoff, poly- neuritis, pellagra			1		1
Alcoholic hallucinosis, poly- neuritis, pellagra			1		1
Transverse myelitis			2	1	3
Combined tract degenera- tion	1		1		2
Combined tract degenera- tion, ant. horn degener'n			1		1
Transverse myelitis, Korsa- koff's syndrome				1	1
Total	4	2	22	3	32

Omitting three cases which died from inter-current diseases, there were 22 cases treated with high vitamin diet, whereas six received ordinary diet. Two of these remained unimproved; but only one out of 22 in the vitamin-diet group went without improvement. In addition, it must be noted that the regular hospital diet, unsupplanted, is probably richer in vitamins than the average home diet of the southern farmers and laborers who come to Charity Hospital. This may partly account for the improvement in the four cases with regular diet.

The high vitamin diet given in our hospital included all kinds of vitamins, without laying particular stress on the non-fat-soluble B group. The patients were given fresh vegetables, fruit, fruit juices, tomato juice, cod liver oil, yeast, and liver extract. According to what has been mentioned before, our knowledge about specific functions of different vitamins is not so well established as to justify any distinction in the therapeutic diet.

SUMMARY

Summarizing, I believe that the therapeutic results of other observers, as well as mine, are encouraging enough to justify recommendation of therapeutic high vitamin diet in the following cases:

(1) Neuritis and polyneuritis, particularly those of alcoholic origin or without any known etiology; however even in cases in which some specific toxic or infectious origin is established, high vitamin diet is in question as an accessory treatment, considering the fact that the specific agent must not be, in every case, the only responsible factor; (2) all kinds of acute or subacute myelitis of unknown or alcoholic origin, particularly combined tract disease and transverse myelitis; again, existence of some specific etiologic factor, e. g. lues, is no reason why vitamin diet should not be given in addition to specific treatment, with some chance of improving the latter's results; (3) acute and subacute "toxic" or "infectious" psychoses, whether alcoholic in origin or from some other known or unknown cause. I have to admit that the theoretical foundation of this treatment, merely as a therapy, is far from being self-evident. However, considering the fact that it probably will take considerable time until the theoretical,

experimental and biochemical approach to the problems concerned will be able to bring on their solution, I believe that therapeutic experiments on a larger scale which scarcely can do any harm, might even teach us something, if not all, about the pathogenesis of those conditions, and about the physiology of nervous metabolism. That is why I want other observers to give the vitamin treatment of nervous diseases a fair trial and to report about their results.

DISCUSSION

Dr. C. S. Holbrook (New Orleans): I was very interested in Dr. Wexberg's work, and had two sensations while he was reading the paper; during the first three quarters of it I thought he was making many claims and including a number of different conditions, and trying to establish one cause for them, but as he read on I saw he did not mean that at all. He was decidedly not too assertive as to the role played by deficiency diet in the numerous and very different disturbances. There is no doubt as to the effect of a diet lacking adequate vitamins in such diseases as beriberi, pellagra, and some neurologic disorders. In alcoholic neuritis it is not very definite. Maurice B. Strauss of Boston believes that high vitamin intake, or sufficient vitamin intake, protects the nerve cells from the effects of alcohol. Most individuals who use alcohol excessively stop eating, and in that way alcohol may directly attack the nerve tissues which are not protected by a moderate intake of vitamins. It would be unfortunate if we treated cases of alcoholic neuritis by permitting them to have the usual amount of alcohol; these chronic alcoholics are difficult, at best, to alter in any way. Going through a most painful experience of neuritis, being bedridden for two or three months, and suffering a terrific amount of punishment frequently leads one to become a total abstainer. Dr. Strauss states he gets satisfactory results whether or not he withdraws the alcohol, provided he places the patient on a high vitamin diet. I think this might help us understand the cause of neuritis that develops in some people and not in others, but I am sure that Dr. Wexberg and no one or us would treat a case of alcoholic neuritis and encourage the patient to take the usual amount of alcohol.

The case of combined sclerosis was interesting. We see a number of individuals suffering with subacute combined sclerosis of the spinal cord in which the etiology can not always be determined. The case history that Dr. Wexberg presented would have been more impressive had the patient not

received liver. The patient was given high vitamin diet with injections of liver, and he responded very well. We see cases of primary anemia which do much the same thing. I do not think there is any reason to criticize the hospital diets of today for being deficient in vitamins, yet we see a number of patients with pernicious anemia who do not respond to this type of treatment until injections of liver extract are given.

The cases of myelitis I have seen usually develop in patients in the upper walks of life, patients in whom there had not been any dietary deficiency and who were not poor or of very restricted means. I am not impressed with avitaminosis as playing any part in the causation of myelitis that I have observed.

All this is an interesting thing to think about. The work Dr. Wexberg is doing is most praiseworthy and I hope he will continue it. I wish him a great deal of success.

Dr. L. L. Cazenavette (New Orleans): Dr. Wexberg has brought before us a subject of great interest on which I would like to make a few remarks.

Organic diseases of the nervous system cause disability in accordance with the different parts affected; the brain, the spinal cord, the nerves. Those of us who have seen well marked cases of multiple neuritis of alcoholic origin will recall the months and sometime years of disability during the period of treatment and convalescence which may and may not be followed by a complete cure. So that any new light on the cause of these affections which would either prevent them or shorten the period of disability is certainly deserving of our attention.

Nutritional deficiency as cause or contributory factor in organic nervous diseases has been the subject of intense research ever since the discovery of its role in pellagra and beriberi. It has been observed that those patients who do not take sufficient nourishment while at the same time partaking of alcoholic drinks are those prone to develop multiple neuritis. This insufficient amount of nourishment and consequently insufficient vitamin intake may be the fault of gastrointestinal or hepatic disturbances so frequently met in such cases. The anorexia and vomiting may prevent the individual from receiving nourishment; if received it may not be digested, if digested it may not be assimilated. These and other conditions must be taken into consideration as possible contributing causes of multiple neuritis.

Another point is that the term neuritis has been loosely used. In peripheral neuritis of alcoholic origin we are dealing with a degenerative process in the nerves and not a true inflammatory one. When degeneration is established it requires a very long

time for the re-establishment of function in the affected nerves. Erb long ago has shown that under the most favorable conditions the regeneration of nerve fibers takes place very slowly, probably at the rate of not more than one centimeter a week. This explains the very long duration of the paralysis in these affections.

I read that Dr. Maurice B. Strauss of Boston reported a study made on ten patients suffering from "alcoholic" neuritis who were allowed to continue the intake of liquor amounting to from a pint to a quart daily, provided they also consumed a well-balanced, high vitamin diet and that the polyneuritis of all patients improved during constant administration of large amounts of alcohol. Others have reported rapid favorable results after the administration of vitamins in such cases. My observations of numerous patients with alcoholic neuritis in my service at the Charity and in private practice, my knowledge of these conditions and my natural conservative views do not permit me to accept these as facts. Lately I have treated cases of alcoholic neuritis with high vitamin content in their diet and I am sorry to say that I have not observed quicker results as compared to former treatments.

Experimental research seems to prove that avitaminosis may be the cause of degenerative diseases of the spinal cord. Should this prove true an early diagnosis in these cases and a proper diet will be of inestimable value in the prevention and treatment of cases heretofore classed as incurable.

Dr. Wexberg (In conclusion): I certainly appreciate the remarks of Dr. Holbrook and Dr. Cazenavette. Concerning the subjects brought up in my paper, as far as those remarks in detail are concerned, of course, I agree with both doctors that I would not advise any patient to go on taking his usual amount of alcohol if only he would stick to the diet I have prescribed. Personally, we do not know how much damage alcohol would do to the organs. We have been taking for granted that the nerves suffer from deficiency in alcoholism. However, I never would dare to affirm that there is nothing but the vitamin deficiency concerned in alcoholic diseases of the nervous system. Only I believe that facts established by Wechsler, Strauss, and several others, are conclusive enough to give us evidence that deficiency plays an important role, is perhaps the essential feature.

As far as liver treatment in combined tract degeneration is concerned, I did not believe I was entitled to leave out liver altogether in the treatment of these cases, and frankly, I do not believe that the results would have been as good without liver. But you have to consider that this does not

make any difference, because the supply of liver does not mean anything but another kind of vitamin supply. The "liver factor", as it is called, has to be considered as another kind of vitamin, which according to the idea of some observers may be identical with vitamin "A". Thus, liver treatment itself is one sort of vitamin treatment.

May I point out, by the way, that in none of those four cases of combined tract disease under my observation was there any symptom whatever of pernicious anemia. There was a plain moderate anemia without any abnormal or immature red cells and the only thing which had some relation to pernicious anemia was the fact that they had an anacidty. So it seems that the thing that you find in most textbooks, that combined tract degeneration or combined tract disease is almost exclusively found together with pernicious anemia does not hold. Liver is considered primarily as a treatment of pernicious anemia, but in combined tract disease, the results of this treatment have not been very successful, except in beginning cases.

Severe cases of combined tract disease ought to be treated with high vitamin diet and yeast tablets together with liver extract.

THE ROLE OF DIET IN NERVOUS DISEASES*

LEWIS A. GOLDEN, M. D.†
NEW ORLEANS

Recent advances in the science of nutrition have stimulated interest in the deficiency diseases, and have forced a renewal of the neurologist's conceptions of certain affections which he is called upon to treat. I refer in particular to the discovery that certain "protective" substances present in the diet, called vitamins, play an important role in the protection of the nervous system against intoxication, and a more indirect part in resisting other affections of the central nervous system.

Because a great deal of this work, both clinical and experimental, is still highly controversial, I shall attempt in this short presentation to indicate only a few of the facts which seem well established. In a general way, the sources of information here scrutinized were from ex-

perimental and clinical experiences of workers known for their careful work. In a few of these instances, I have been involved in a small way in the observations incident to this work.

INFLUENCE OF VITAMINS

Definite knowledge of the importance of vitamins in the production of a disorder implicating chiefly the nervous system came with the identification of beriberi. Vedder, in 1913,¹ had described changes in the central nervous system in beriberi on deprivation of vitamin B. Woolard,² of London, was able, in 1927, to demonstrate definite non-inflammatory degeneration in the peripheral nerves from lack of vitamin B. Since that time, the literature dealing with experimentally produced neurologic lesions on the basis of special vitamin deficiency has been voluminous and cannot be considered here in detail. A few may be indicated in order to note the trend of opinion. Other workers^{3,4,5,6,7} soon reported various changes in the central nervous system on depletion of vitamins B₁ or B₂. Some of these findings were not considered reliable as they were said to "resemble closely artifacts due to faulty technique".⁸

At about the same time, Goldberger⁹ and his group and many others, working with pellagra, showed that the lack of vitamin B₂, responsible for the disease, also produced psychotic and neurologic involvements. While recently Wolbach,¹⁰ who has studied the pathologic and physiologic tissue changes of the vitamin deficiencies, has indicated that the nervous system involvement is probably a secondary and not a primary one, the fact remains, however, that it is quite regularly implicated and the relationship of the disease to the vitamin lack is strongly suggested.

PERNICIOUS ANEMIA

Among the diseases in which neurologic complications occur frequently is pernicious anemia. Grinker has found that when the earliest signs of pernicious anemia include numbness and tingling, about eighty per cent of the patients develop cord changes. Those who experienced paresthesias late in the disease were far less liable to develop serious lesions in the cord and only about twenty per cent were so affected.

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Various groups working with pernicious anemia have sought to explain the nervous tissue involvement by pointing out its similarity to experimentally produced neurologic lesions in animals. These laboratory efforts have not been entirely enlightening or convincing. Gildea, Kattwinkel and Castle¹¹ reported severe cord changes in dogs deprived of vitamins B₁, B complex, and B₂, and believed their findings resembled those seen in pernicious anemia. Castle¹² concludes "that the cord lesions of pernicious anemia are caused by a deficiency of vitamin B, which, in turn, is probably the result of the achlorhydria". However, the almost miraculous clearing up of a supposedly serious neurologic lesion in a few hours^{11,8,13} after the feeding of the deficient vitamin speaks against any true similarity of this experimentally produced condition to cord complications of pernicious anemia. The same objection applies to other experimental attempts claiming to have produced a condition identical with that seen in combined degeneration of the cord in man with pernicious anemia.

While studying experimental pancreatic disease in dogs with Pratt of Boston, M. B. Handelsman¹³ and I were enabled to observe the development of a clinical, neurologic disorder due to a deficiency of vitamin B in the diet. The dogs developed weakness and spasticity of the hind legs, with marked ataxia on walking which was rapidly cleared by the addition of brewers' yeast to the diet.

In 1933, Carmichael,¹⁴ of London, and I reviewed cases of pernicious anemia with neurologic complications, who had been treated for several years with liver by mouth at Guy's Hospital, St. Bartholomew's Hospital, and at the National Hospital for Nervous Diseases in London. We were unable to demonstrate any definite neurologic improvement as judged by careful neurologic examination. Frequently, amelioration of symptoms was noted in areas dependent on the involvement of the peripheral nervous system. A great deal of the improvement attributed ordinarily to the recession of serious cord lesions was found to be based on the general improvement which occurs in the severely anemic patients placed on adequate treatment with liver. As their anemia was improved, their strength increased, the ataxia and

sensory changes due to peripheral nerve involvement improved, as well as other disabilities based primarily on their general weakness. It is a noteworthy fact that no trained neurologists have reported the clearing of any serious neurologic signs in pernicious anemia.

In 1934, Dameshek,¹⁵ of Boston, properly criticized my statement made at a conference of the Medical Clinic of the Boston Dispensary by pointing out that the patients examined by Carmichael and I had not received intensive parenteral liver extract treatment. While following cases of pernicious anemia being treated intensively at the Boston Dispensary by Dameshek and Olef, I was again unable to demonstrate the reversal of serious neurologic signs even with intensive parenteral liver therapy. In one case, intensively treated by parenteral liver extract, I witnessed the development of paresthesia for the first time during the patient's illness. In a recent personal communication, however, Dameshek stated that it was his definite impression that most of the cases improved, and in some cases considerably so. It was also his impression that in not a single instance did the neurologic signs become worse.

On the whole, however, clinical reports on results of treatment in pernicious anemia directed towards the neurologic complications are still at great variance.^{16,17,18,19,20,21,22} Reports emanating from neurologic clinics are not encouraging, while occasional investigations from other clinics are definitely favorable, claiming not only to be able to stop the progress of the disease but actually to clear it. Among the latter encouraging reports are the recent ones of Schaller and Newman,²³ and Mills.²⁴

It is reasonable to expect that the progress of the neurologic complications may be stopped by adequate therapy, but the claims of ability to produce regression of neurologic lesions in the cord must be examined critically and with full realization of the serious pathologic lesion of the cord that exists in pernicious anemia. It is also well to reiterate that regeneration of destroyed nervous tissue in the central nervous system does not occur. Recent studies of Gerard and Grinker,²⁵ and Davison²⁶ have again shown the absolute lack of regeneration in the spinal cord. The only change noted has been some tendency to glial formation in the treated

cases. Obviously, this does not promise restoration of function.

EVIDENCES OF IMPROVEMENT

The evaluation of neurologic improvement must be very critical. Often the patient weakened by his anemia responds to treatment and with the increase of strength, his ataxia diminishes and his attention to sensory stimulations is increased. Many workers offer evidence of regression of cord symptoms by noting the return of power to discriminate between two points and increased appreciation of vibratory sensation. Head,²⁷ in his famous studies of sensation, has shown how fatigue favors inattention and poor results on tests for "sensation". At times, improvement appears to be present when in reality the disease is progressing. For example, many patients who show the early posterior column involvement develop as a result ataxic, weak, almost useless legs, but as the pyramidal tracts become increasingly involved the knee jerks return, the legs become spastic and can now be used for supporting pillars in walking. This produces the appearance of improvement when, in reality, the lesion has spread to the lateral columns. So seldom is true reversal of signs demonstrated without the appearance of evidence of the spread of the lesion in other parts of the cord that such an instance is a striking exception to the rule. I have never observed it, and neither have some of my colleagues in neurology. The criteria for improvement in the cord are often of questionable merit. The two-point discrimination, or compass test, has uncertain value in pernicious anemia because peripheral nerve involvement producing tactile disability is so common. Head states, "The compass test, though of great scientific interest, is of little diagnostic importance in lesions of the spinal cord." Also,²⁸ "The compass test may also furnish corroborative evidence that the sensory disturbance is of the higher type; but it labors under the disadvantage that it is profoundly affected by any disorder of tactile disability and it is, therefore, not a specific test from the cortical point of view."

The use of the tuning fork as the sole criterion of improvement is also of questionable value if sensation is affected. However, it is stated

to be a valuable test for lesions of the spinal cord and the "most easily handled indication of the function of the posterior column".

It seems to me that the return of ability to recognize passive movement and posture, the return of deep pressure pain, the return of deep reflexes without increased spasticity and without the appearance of a Babinski are more reliable evidences of return of function in the spinal cord. Constant interplay of changing amounts of involvement between the posterior columns and the pyramidal tracts is mirrored in the changing state of reflexes during the progress of the disease, and these must be carefully evaluated.

The return of sensation dependent upon peripheral nerve improvement must not be loosely interpreted as regeneration in the "cord", as the former can regenerate, while the regeneration of nervous tissue in the cord itself, especially in view of the type of pathologic lesion present in pernicious anemia, is hardly to be expected.

The inference is that once neurologic lesions in the cord are established, treatment by liver extract or other methods has apparently little beneficial effect on these established lesions as judged by critical neurologic criteria. On the other hand, there is reason to believe from experimental and clinical data that adequate liver and vitamin therapy early in the disease may protect the nervous tissue and favorably influence the course of the disease by stopping the progression. In this direction, I believe, lies the immediate progress in the clinical treatment of the disorder. The emphasis must be shifted to clinical methods for earlier recognition of the nerve involvement at a stage where adequate liver, and especially vitamin B₁ and A, can intercede and stop the progress of the neurologic complications.

PROTECTIVE ACTION OF VITAMINS

That vitamins do act as protective substances against central nervous system disease is strongly suggested by the numerous experiments of Mellanby,²⁹ and others. In recent experiments he deprived dogs of vitamin A and claimed to have produced in some of the dogs degenerative lesions in the spinal cord similar to those seen in beriberi, pellagra and pernicious anemia. Those affected showed practically no storage

of vitamin A in the liver. He also found that in feeding dogs toxic amounts of ergot he could prevent the resulting lesions in the spinal cord by feeding vitamin A along with the ergot. Without the addition of the vitamin A, he consistently produced cord lesions. It is of interest that at the same time he showed that carotene worked protectively, just as did vitamin A. He concluded that faulty absorption or storage of vitamin A may be responsible for such lesions in pernicious anemia and other diseases. Other workers, however, have been unable to produce cord lesions by vitamin deficiency. Verden, Petren³⁰ and Grinker were unable to produce it in monkeys. In a general way, the experimental work dealing with the production of cord changes due to vitamin deficiency is still highly unsatisfactory. All that can safely be deduced is that certain vitamins protect the nervous tissue against degeneration under experimental conditions.

In spite of the clinical reports of Ungley and Suzman,³¹ Longcope³² and others, reporting improvement in the neurologic status by whole liver feeding, Grinker,²⁵ after studying a carefully controlled series over a two and one-half year period, found no evidence of improvement.

Stimulated by the report of Ungley and Suzman, Carmichael³³ and I studied the effect of feeding high vitamin B concentrate (marmite) on patients in the Research Unit of the National Hospital, Queen Square. No improvement was noted even when marmite, included with normal human gastric juice, was used.

The protective action of vitamins finds clearer expression in the recent work on alcoholic polyneuritis. This old disease has for many years been considered the result of direct alcoholic injury to the nerve. However, some highly interesting and convincing work has demonstrated that this is a condition definitely related to dietary deficiency.

VITAMIN DEFICIENCY IN ALCOHOLICS

The serious crippling results appearing in many chronic drinkers in the form of a polyneuritis has until recently been ascribed to the toxic action of alcohol alone. It is evident that alcohol, as well as lead and arsenic, probably does have a direct toxic effect on nerve tissue,

but recent work points to the great importance of the protective substances of the diet in this disorder. Perkins³⁴ states, "In a chronic alcoholism there are several factors producing the state of avitaminosis. The direct attack of the alcohol on the liver and gastric mucosa, the loss of appetite reducing the intake of food, the vomiting and diarrhea all help in reducing the vitamin assimilation." It has often been remarked that alcoholic addicts who consume little food often develop marked neurologic symptoms, while those who eat well and have no digestive disorder seldom develop this condition. The role of vitamins in the prevention of alcoholic polyneuritis was forecast by Shattuck³⁵ in 1928. In 1929 Wechsler³⁶ actually investigated the diets of alcoholics with polyneuritis qualitatively and concluded that an avitaminosis was of definite importance in the development of the polyneuritis. Following this preliminary report Meyer³⁷ came to the same conclusion. Minot, Strauss and Cobb³⁸ then investigated the diets of forty-three alcoholics. In forty-one of these they concluded the vitamin intake had been inadequate, and stressed the similarity of this disorder to that of beriberi and pellagra, suggesting that the common etiological factor was a lack of vitamin B.

Strauss³⁹, in an interesting study of ten alcoholics with polyneuritis, showed that he could improve the peripheral neuritis in spite of the continued consumption of a quart of whiskey daily. He gave during this period a vitamin rich diet supplemented by the oral administration of eighteen grams of vegex, or ninety grams of brewers' yeast daily, and ten c.c. of vitamin B₁ concentrate, and ten c.c. of liver extract parenterally each week. Jolliffe, Colbert and Joffe⁴⁰ and others studied the diets of forty-two alcoholics quantitatively, using Cowgill's formula as the criterion of adequacy for vitamin intake. They concluded that every alcoholic with polyneuritis had an estimated *inadequate* vitamin B intake; that no alcoholic with an estimated *adequate* vitamin B intake had polyneuritis, and that polyneuritis in the alcohol addict is due to vitamin B deficiency.

PELLAGRA

McLester and colleagues studied the similarity of pellagra to alcoholic polyneuritis. They

found that both conditions were probably identical and both could be relieved by the same dietary treatment. While working with Thomas at the McLean Hospital in Waverly, Massachusetts, we obtained gratifying results with high vitamin treatment in cases of alcoholic polyneuritis with Korsakoff's syndrome. While space does not permit detailed case histories, it may be stated that these patients cleared up rapidly and apparently completely from their psychotic symptoms and manifested striking improvements of their polyneuritis.

OTHER INFLUENCES OF VITAMIN B

Other investigators have recently suggested the importance of vitamin B in the chemistry of brain tissue respiration.⁴¹ Further interest has been aroused by clinical evidence of the value of crystalline vitamin B in patients complaining of "nerve pain" by the recent work of Vorhaus and his co-workers⁴². More recently, Russell,⁴³ of Edinburgh, has found vitamin injection parenterally to be of value in other "degenerative nerve disorders". Wexberg⁴⁴ has recently stressed his theory of the "metabolic crises" as the important factor responsible for the appearance of certain nervous and mental disorders in vitamin deficiency.

During the past year I have had the opportunity of investigating the clinical effect of high vitamin B diet in Sydenham's chorea since clinical experience had strongly suggested that an inadequate diet and consequent lack of vitamins may have favored the involvement of the nervous system. Gratifying results were obtained in the few instances in which this diet was provided, and, in each case, choreiform movements subsided within a few weeks, and general improvement was greater than that usually seen in such cases without prolonged bed rest. It is hoped that further opportunity will enable us to draw more definite conclusions as to the value of this treatment in Sydenham's chorea.

CONCLUSION

The neurologist and the dietitian have reason to be thankful for the bits of knowledge that have accumulated during the past few years. Everywhere workers in this field are acquiring new data. It is hoped that further work will clear some of the controversial aspects of

these studies. Definite indication of the importance of vitamins B and A for the integrity of the nervous tissue has already been demonstrated.

In the present state of knowledge the maintenance of an adequate vitamin intake in nervous diseases seems highly desirable, especially as a preventive measure. In direct therapeutic efforts against established neurologic diseases, the clinical results such as those already obtained in alcoholic polyneuritis afford expectation of other advances in this direction.

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THE PRESENT DAY CONCEPTION OF AGRANULOCYTIC ANGINA

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NEW ORLEANS

The disease known as agranulocytic angina was first described by Werner Schultz¹ in Germany in 1922. The main features of the disease are: leukopenia, due to a marked depression or complete absence of granulocytes, prostration, malaise, fever, toxemia, headache, ulcerative lesions of the mucous membrane of the mouth, vagina or rectum and in some cases jaundice. The leukocytes may be reduced to 1000 cells or less per cubic mm., this reduction being due to the marked decrease in granulocytes. There is rarely any alteration in the number of red cells, blood platelets or hemoglobin, unless the case is of fairly long standing. The diagnosis is easily made if proper laboratory procedures are carried out in carefully checking the total and differential leukocyte counts. The course of the disease varies from the acute case which may terminate fatally in a few days to the chronic case which may last for months. Apparent good health for a while may be followed by relapses. Chronic forms have been described by Fitz-Hugh and Comroe² and Doan.³ These chronic forms constitute about 25 per cent of all cases.

The most frequent age incidence is between 40 and 50, the age incidence being a little later in males than in females; no age, however, is exempt. The disease is twice as common in females as in males. According to Kracke and Parker⁴, the disease is fairly common among physicians and members of their families, dentists, nurses, pharmacists and laboratory workers. This may be due to the familiarity of these groups with the coal tar derivative or benzene ring drugs as amidopyrine, which I will give later as possible etiologic agents. The incidence

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is highest in America and Germany where these drugs are more commonly used. The disease is limited almost entirely to the white race, very few cases having been reported in negroes.

The mortality in untreated cases is high, running approximately 75 per cent. Since the introduction of pentnucleotide therapy, stimulation of bone marrow with light doses of roentgen ray, blood transfusion, splenic extract and other forms of treatment, the mortality rate has dropped to about 25 per cent.

ETIOLOGY

A variety of causal agents have been incriminated as possible factors in the production of agranulocytic angina, which may be discussed under the following headings:

1. Drugs and chemicals.
2. Bacteria.
3. Allergy.
4. Endocrine disturbances.
5. Radiation.
6. Bone marrow dysfunction.

1. *Drugs and Chemicals.*—The destructive action of benzene upon the hematopoietic structures has been demonstrated by Selling.⁵ It has been shown by Kracke⁶ that when small quantities of benzene are injected into rabbits the granulocytes are depressed, leaving the red cell and platelet elements undisturbed. Kracke and Parker⁷ have collected data on a considerable number of cases of agranulocytosis in which it appears that amidopyrine, phenacetine or dinitrophenol were the causative agents. The above drugs and all others containing the benzene ring as their central nucleus should be avoided in the leukopenic patient. Barbiturates as a class do not appear to have been incriminated. There is no case on record attributable to the use of aspirin. The literature contains many cases which followed the administration of arsphenamine.

The following table prepared by Hunter¹⁰ shows the large number of drugs containing amidopyrine and at once one is impressed by the common use of this drug:

Afanal	Gynalgos
Allonal	Hexin
Alphebin	Ipral-amidopyrine
Amarbital	Kalms
Amido-neonal	Klimaxid
Amidophen	Lealgin
Amifeine	Leamon
Am-Phen-Al	Lumordrin
Ampydin	Midol
Amytal compound	Mylin
Asciatine	Neonal compound
Baramid	Neurodyne
Barbromide (Columbus)	Optalidon
Barbipyrin	Peralga
Benzedo compound	Phenamidal
Butapyrin	Prokliman
Cansyth	Propyrin
Cibalgin	Pyramidon
Cincopyrine	Pyrallyl
Compral	Pyraminal
Diallypyrin	Sal-Ethyl carbonate compound
Dolarin	Sedallyl
Dianalgin	Trigemin
Dysco	Vepydol
Gardan	Veramon
Geamin	Veropyrin

2. *Bacteria.*—A number of cases of agranulocytosis appear in the literature which apparently have followed the injection of typhoid vaccine. Approximately 20 per cent of well established cases of agranulocytic angina show positive blood cultures and at least 25 different micro-organisms, mostly streptococci, have been isolated. This should not be interpreted that the bacteria are regarded as the causative agents but are merely secondary invaders gaining entrance, most likely, through the ulcerated areas on the mucous membranes. Absence of granulocytes and lack of proper local host reaction makes this possible. Harris and Schattenberg⁸ and Dennis⁹ have produced the agranulocytic syndrome with the toxic products of bacteria.

3. *Allergy.*—The possibility of this as a causative agent has been thoroughly covered by Hunter¹⁰ in a well prepared paper. Some of these patients have been shown by the skin patch test to be definitely hypersensitive to the benzamine ring drugs. The allergic reaction, whatever the cause may be, represents a form of poison which may act as a depressant upon the leukoblastic structures.

4. *Endocrine Disturbances.*—The coincidence of the onset of the disease with menstruation as reported by Thompson and others¹¹ suggests possibly the association of some endocrine disturbance. Experimentally leukopenia has been produced in animals by removal of adrenal tissue.

5. *Radiation.*—The prolonged effects of thorium "X" and roentgen radiation upon leukoblastic structures may play a part in the causation of the disease.

6. *Bone Marrow Dysfunction.*—This has been attributed to glandular derangement. The absence of chemotactic and maturation factors should be thought of. The latter has not yet been isolated but it is possible that such a factor may exist.

PATHOLOGY

The majority of cases show necrotic ulcer-like lesions of the mucous membranes of the throat, vagina or intestinal tract. Histologically the tissues surrounding the ulcer show a slight host reaction consisting of a moderate number of round cells and few if any polymorphonuclear leukocytes. The results obtained in the estimation of the various leukocytic cells on the differential count are of interest and great importance. At times there is an absence or almost complete absence of cells of the polymorphonuclear type and there is noted then an apparent but not an actual increase in the percentage of lymphocytes. The granulocytes as noted in the blood smear stained by Wright's method show marked changes. The cytoplasm appears vacuolated and the borders of the cell appear irregular and indistinct. The granules appear swollen and stain poorly or may be absent entirely. The nucleus is pyknotic or karyolytic. The most important lesion in this disease, however, is found in the bone marrow. Undoubtedly the bone marrow picture varies with the stage of the disease. The early stage shows a disturbance in maturation or "maturation arrest" with few if any of the polymorphonuclear series of leukocytes. In connection with the maturation arrest the marrow may appear hyperplastic at this stage. The cells are mainly myeloblasts and myelocytes and are pale, vacuolated, lose their granules and stain poorly. Still later the myeloid tissues may become aplastic. Early in the disease one is struck with the

similarity of the bone marrow in agranulocytosis and pernicious anemia, the only difference being a disturbance in maturation of granulocytes in the former, while in the latter there is a disturbance in the maturation of red cells. In the pernicious anemia patient maturation of red cells proceeds again normally when maturation stimulating factors in the form of liver or liver extract are introduced. Could it be that the lack of maturation factor for the granulocytic cells is responsible in agranulocytosis? The pathology of the bone marrow in agranulocytosis has been ably discussed by Jaffe,¹² Darling,¹³ Custer,¹⁴ Fitz-Hugh and Krumbhaar.¹⁵

TREATMENT

A satisfactory and specific treatment has not as yet been discovered. This at once becomes apparent after a tabulation of all the different therapeutic agents recommended in this disease. The ideal treatment would be one which supplied both chemotactic and maturation factors. Some micro-organisms, such as the typhoid and influenza bacilli, act in a chemotactic way, drawing granulocytes into the circulation while at the same time depressing maturation and in this way producing leukopenia. Where the bone marrow is normal or hyperplastic a chemotactic drug such as pentnucleotide is indicated. Where the bone marrow is aplastic very little can be done therapeutically since a maturation principle for granulocytes, comparable to the maturation factor for red cells in pernicious anemia, has not yet been discovered. Many of the cases terminating fatally have had aplastic bone marrows. The following are some of the therapeutic agents employed:

1. Pentnucleotide, nucleotide K 96.
2. Leukocytic extract or suspensions intramuscularly. Theoretically this form of treatment should be of value since it supplies the same split products as those liberated by the physiological destruction of leukocytes (third to fifth day) in the body.
3. Desiccated bone marrow, orally.
4. Blood transfusions, giving frequent small injections. The donor's blood may stimulate normal maturation. This form of treatment is indicated in cases with an aplastic bone marrow.
5. Immuno-transfusion.

6. Roentgen ray therapy used cautiously. If dosage is too great the small amount of leukoblastic tissue remaining may be rendered inactive.

7. Splenic extract. Probably has very much the same effect as leukocytic extract.

CONCLUSIONS

1. The etiology of agranulocytic angina has not been definitely established.

2. A variety of agents may give rise to this syndrome. The more common ones are, coal tar derivative drugs containing the benzamine ring, toxic products of bacteria, radiation and gold salts.

3. The disease is prevalent in Germany and the United States, probably due to a higher consumption of benzamine ring drugs in these countries.

4. It is more prevalent among doctors and their relatives, nurses, hospital employees and pharmacists than in any other group of people.

5. The benzamine drugs, acetanilid, phenacetine, amidopyrine, benzene, arsphenamine and neoarsphenamine on oxidation, both in vivo and vitro, yield catechol and hydroquinone which act as leukoblastic depressants. Aspirin belongs in this group but since it is not easily oxidized it yields very little if any of the above end products.

6. Bone marrow studies show a maturation arrest in many cases with a normal or even hyperplastic marrow.

7. The theory has been advanced by some workers, but without definite proof, that agranulocytic angina may be due to the absence of a granulocytic maturation factor analagous to pernicious anemia wherein there is noted an absence of the maturation factor of red cells.

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DISCUSSION

Dr. M. E. Cox (New Orleans): The syndrome as described in Dr. Schattenberg's paper, and termed agranulocytic angina, presupposes that there is, first of all, a granulopenia of the peripheral blood stream as a reflection of some disturbance of the bone marrow. Secondary to that we have various clinical manifestations. Among the more obvious of the clinical manifestations are the ulcerative processes of the mucous membrane, particularly of the mouth and pharynx.

Since the mortality is so much decreased by an early diagnosis and the institution of proper treatment, it behooves the clinical man to be on the constant lookout for agranulocytic angina. So far as the consideration of the mucous membrane manifestation is concerned, one might mention the differential diagnosis of such things as diphtheria, Vincent's angina, acute follicular tonsillitis, streptococcic sore throat, and so forth. The differentiation of these conditions must be made upon a sound clinical basis, but it cannot be overstressed at this time that a total white and a differential count are essential. It is sometimes very important to repeat the total and the differential white count; one not being sufficient grounds upon which to base an opinion.

Certain other conditions come into prominence as possible points for differential diagnosis. A word or so might be said about several of these. First of all certain of the lymphoblastomas in which the peripheral blood picture is that of a leukopenia have, according to some writers, been confusing. In that case, the clinical manifestations will usually deviate sufficiently to set the condition apart from the agranulocytic angina, and of course, biopsy of the lymph node will always give the true differentiation.

Another condition might be listed as acute lymphatic leukemia in the leukopenia phase, in which we see diminution of the total number of white cells in the peripheral circulation along with the relative increase in lymphocytes. The same condition is very frequently found in agranulocytic angina. But in the case of acute lymphatic leukemia one usually finds very young and large size lymphocytes in the peripheral blood in contradistinction to the small, mature, senile forms of lymphocytes seen in the peripheral blood in the case of agranulocytic angina.

In the case of the chronic forms of agranulocytic angina, the question of differentiation from an aplastic anemia may arise. In the case of aplastic anemia certain things, such as the more prominent purpuric manifestations, the progressive anemia, thrombocytopenia, or an entirely atrophic or aplastic type of bone marrow will usually serve to set the entity, namely, the aplastic anemia, apart from agranulocytic angina. Of course, we have the infectious mononucleosis which at times may be confusing. Some investigators and writers have advocated the use of a chemotactic substance of the nature of a foreign protein to set aside the diagnosis on the therapeutic trial basis. That is, upon the exhibition of the chemotactic substances in the infectious mononucleosis, one usually gets a very rapid response in appearance of the granulocytes in the peripheral blood.

As brought out by Dr. Schattenberg in his paper, to theorize about the etiology of this condition, namely, agranulocytic angina, one should remember that Fitz-Hugh and Krumbhaar proposed that possibly there is a maturation principle necessary for the development of the white cells, just like we have in the case of the maturation of red cells. This naturally brings to our minds the perversion of this latter mechanism seen in the pernicious anemia.

In the cases reported in the literature, in which bone marrow studies have been made, there seems to be no uniformity of opinion as to the typical appearance of the marrow elements at any particular stage in the clinical condition which we term agranulocytic angina. The bone marrow has been described as being anything from hyperplastic to hypoplastic. So it might be in order at this time to advocate more widespread use of the sternal puncture to obtain bone marrow for study along with the study of the peripheral blood in suspected cases of agranulocytic angina.

The numerous etiologic agents which have been proposed and the discrepancy in the experimental production of agranulocytic angina by the use of these agents leads us to seek a new viewpoint on the subject. Certainly it seems most logical that the study of the bone marrow in correlation with

the appearance of the peripheral blood along with the other clinical manifestations might be in order at this time, and might elucidate and prove beneficial.

Dr. G. F. Fasting (New Orleans): I say my first case of this type in 1925. The entire leukocyte count dropped to 200 per cubic millimeter, the cells were all monocytes. The patient came to the hospital on account of a Vincent's infection following a tooth extraction. The patient died after developing thrombosis of the neck vessels and abscesses in the lung. The case does not appear in the statistics as agranulocytosis. It was a case of Vincent's infection with pulmonary complications.

I would like to present to you a picture of what is often likely to happen. I was called at the Charity Hospital to do a blood culture on a case diagnosed as agranulocytosis. The patient gave off a most foul odor. The tonsils were putrid and I surmised a Vincent's infection which was proven by smears. The tonsillar condition apparently was minimized by the attending physician. Pentnucleotide was tried and there was a satisfactory response, but the patient returned two weeks after being discharged. Neoarsphenamine was then used. I have seen two additional patients in whom extraction of teeth was followed by Vincent's infection, resulting in cellulitis, thrombosis of vessels of the neck and pulmonary pathology.

There is one infection that one should respect. It is Vincent's infection of the tonsils and Vincent's infection following extraction of a tooth in the lower jaw. Vincent's infection probably lurks around more frequently than we suspect.

What is Vincent's infection? It is a combination of spirilla, fusiform bacilli, streptococci and others. Only the mixture appears capable of producing the terrific necrosis. If you will read the work of Smith of Duke University, you will find that his experimental work illustrates that only a combination of these organisms is capable of effecting putrid necrosis.

I know of four cases that are not in the literature on the basis of agranulocytosis. They all had Vincent's infection. Probably your statistics are a little low on the basis that all cases with a blood picture of agranulocytosis are not reported. The blood picture gives us no hint of the etiology.

That takes us to the other question of doctors and so-called housewives. It is all very interesting to look into the question of amidopyrine, but why not ask another question. Why do they persistently take amidopyrine? A large number of people have headache. Why do they have headache? Is it because of constipation? Are doctors exempt from constipation? Not at all. Are

they exempt from other troubles of the gastro-intestinal tract?

It is all very well to do bone marrow studies and it is necessary to complete the picture from all angles. But when we have a case at hand, let's get a detailed history of habits of the individual and why amidopyrine was taken.

As to the question of the sulphhydryl group, in cases of constipation, indol is taken into the circulation and after combining with a sulphur radical it appears in the urine.

My plea is that there are a number of factors responsible for a syndrome that we call agranulocytosis. The lesions seen in the mouth are attributed to secondary invaders. But many patients do not have these lesions. Could not the lesions be an actual manifestation of an infectious etiology?

Assuming a multiplicity of agents, we will, after much work, arrive at a common factor of some poisoning on the bone marrow. It may be that amidopyrine, plus whatever is ailing the individual gives the pathological blood picture more readily than the amidopyrine alone. Amidopyrine administration by large doses to the rhesus monkey, has at my hands, failed to produce any significant change in the blood picture. I believe the literature substantiates the failure of producing agranulocytosis in the monkey by the oral route. The monkey is not a constipated animal, nor is it an eater of meat. If injections of amidopyrine help to produce the pathological picture, it will not tell the story of how it operates in man.

I believe that if we pursue more thoroughly the history of the patient we shall probably find more bacterial causation than is realized at present. Otherwise I agree with Dr. Schattenberg. I only meant to amplify with reference to Vincent's infection as being one factor in producing the picture, which so frequently is left out of statistics.

Dr. H. J. Schattenberg (In conclusion): I am glad Dr. Cox brought up and stressed the importance of the proper differential diagnosis. I failed to say anything about that but it should have been mentioned.

I said something about sternal puncture, but Dr. Cox insisted that should be stressed more, and I think he is perfectly right. In quite a few instances this will help us in knowing how properly to treat such a patient.

Dr. Cox and Dr. Fasting have said cases of agranulocytosis due to drugs are not so common and Dr. Fasting made the statement that any number of experimental animals have been given these drugs and that it was impossible, or only in a few instances possible, to reproduce the agranulocytic syndrome. I agree with him thoroughly on that, since I have tried to reproduce agranulocytosis with drugs and other agents and it is not

every experimental animal that will reproduce this syndrome. Neither will every human being develop agranulocytosis following the administration of the drugs mentioned. Probably thousands of people will take these drugs day in and day out, and only one in that whole group will develop agranulocytosis due to the ingestion of the drug. Just why that one patient is susceptible and why that one patient develops agranulocytosis is difficult to explain. It may be that these cases which develop agranulocytic angina following the administration of these drugs, according to Hunter, are allergic or hypersensitive to these drugs, or there might be some other explanation. Therefore in order to produce an occasional case in animals, I think a very large number of animals will have to be used.

I heartily agree with Dr. Fasting on what he had to say about the poisonous effect of necrotic tissues. I think possibly the effect of those is very much like those of the toxic products of bacteria. I believe the way in which toxins possibly act is in depressing or paralyzing the leukoblastic structures, so that you might get a dysfunction of the bone marrow.

ARTIFICIAL PNEUMOTHORAX*

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The beneficial effect of collapse therapy on a tuberculous lung was recognized and commented upon long before artificial use of this treatment was practically introduced in the last two decades of the nineteenth century. There is no record of the first pulmonary collapse, as nature did this with the first pleural effusion. In 1832 James Houghton reported marked improvement in a case of advanced tuberculosis following a spontaneous pneumothorax. This same patient was soon after reported to have resumed work as a bricklayer. At about this same time, James Carson suggested and tried pneumothorax treatment for the collapse of the tuberculous lung. It is presumed that the two cases in which he vainly tried the method, collapse, even of partial nature, was prevented by adhesions. Potain was actively involved in this work especially between 1884 and 1888. During this time he treated cases of hydro-pneumothorax by aspirating fluid and injecting air. He also advocated continuation of refills

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where collapse was started by spontaneous pneumothorax. The results were quite good. Later he advised the use of nitrogen as the re-fill gas, due to its inertia and slowness of its absorptions. Toussaint and Forlanini worked on this form of therapy at about the same time. Forlanini published his results in 1894. It was not until 1908, when Saugmon devised a new apparatus containing a water monometer, that this type of treatment became safe. John B. Murphy was among the first to introduce its use in this country.

TECHNIC

Although absolute asepsis is essential in the operation for artificial pneumothorax, the technic may be very simple and not surgically formidable. The most favorable point at which to introduce the air is in the fourth or fifth costal interspace in the anterior axillary line. Either novocaine or procaine, one per cent solution, is employed as the local anesthetic, using a fine needle. The pleura should be approached slowly and anesthetized carefully. In administering the air, the oscillations of the water monometer must be closely watched throughout the operation. In spite of the fact that for each individual the optimum air pressure is different, it may be said that about 300 c.c. of air should be introduced every few days. The intervals between treatments may be increased one day after each administration. In the early stages of collapse the use of high pressure is always dangerous, and seldom proves more efficacious than moderate pressure. Most accidents are avoidable; they result from haste, lack of skill, and insufficient attention to the movements of the monometer. A large cavity, a blood vessel or a bronchus may be punctured. Puncturing of the lung may produce a traumatic spontaneous pneumothorax, which is likely to be complicated by empyema.

Certain complications may be an obstacle to successful treatment. Pleural adhesions, if not too extensive, may be stretched so that they do not prevent complete collapse. They are the most common complications.

Pleurisy with the effusion of a clear serous fluid develops in about fifty per cent of cases, and unless the effusion is so great as to pro-

duce symptoms of pressure it should be disregarded. The most serious complication is infection, either from without, which is rare, or from within, as a result of the tearing of adhesions or puncture of the lung.

GENERAL OBSERVATIONS

Pneumothorax therapy has been used with wide success in selected cases of pulmonary tuberculosis, lung abscess, bronchiectasis and lobar pneumonia. Pulmonary hemorrhage can be stopped almost immediately by rapid collapse of the offending lung.

The importance of selecting cases for collapse therapy cannot be too strongly stressed. In selecting tuberculous cases, it is important to select only those cases which do not have bilateral involvement, unless it is intended to give bilateral collapse. The ulcerative type responds most favorably. Careful roentgen ray and laboratory study is imperative. In selecting pulmonary abscess cases for collapse therapy by this method, Whittemore and Balboni found that the patients most likely to respond favorably to this method are those in whom the following conditions are fulfilled: (1) the abscess is situated centrally; (2) it communicates with a bronchus; (3) the treatment is established within three or four months from the onset of the disease, and (4) a complete or almost complete collapse of the lung can be obtained. They are, of course, precisely the conditions one would expect to be most favorable for the success of this method.

The progress of the case undergoing this type of treatment should be followed with monthly roentgen ray pictures. The clinical aids are not of the typical text book type as described for spontaneous pneumothorax. The percussion note varies from hyper-resonance to tympany, according to the pressure at the time. The distance of the breath sounds varies with the thickness of the air layer. Bell-like coin sounds, amphoric breath sounds and metallic whispered and spoken voice sounds may be noted in some cases. The breath sounds of the contralateral lung are often exaggerated, puerile, or of the emphysematous type. Rales heard over healthy lung tissue may be due to transmission of the sound from the diseased lung. The heart is usually pushed to normal side, although in some cases of incomplete collapse,

the heart is displaced to the diseased side due to contractions of the collapsed lung and the restricting adhesions.

Artificial pneumothorax is the best and most universal method for collapsing of the lung, but undue delay in its timely application has heretofore resulted in pleural adhesions that have prevented satisfactory collapse in over one

half of the indicated cases. The trend for its early and widespread use during the past five years has lessened the incidence as well as extent of restraining adhesions, and this fact has been strongly advanced by some authorities for the use of pneumothorax even in early lesions before pleural adhesions of any consequence have formed.

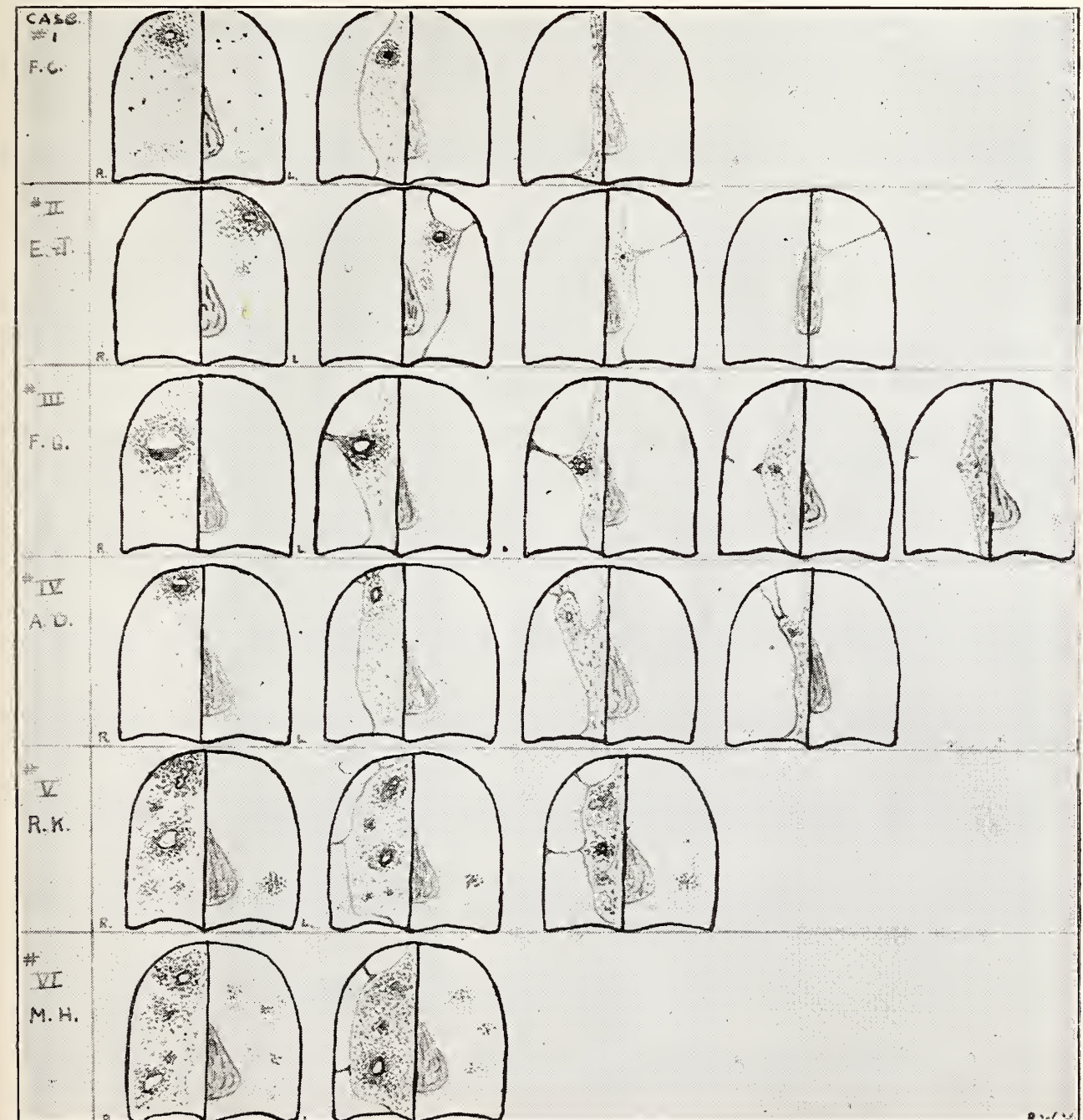


DIAGRAM OF ROENTGEN RAY PLATES OF EACH PATIENT IN SUCCESSION WHOSE CASE REPORTS FOLLOW.

CASE REPORTS

Case 1. F. C., a white male, aged 24, first became ill in March, 1935, following an attack of influenza. He continued to cough, lose weight and have a general tired feeling. Hemoptysis brought him to the doctor, who advised roentgen ray of the lungs, which demonstrated a cavity in the right apex with surrounding interstitial involvement. He was advised to begin air therapy and did so at once. Sputum was plus for tubercle bacillus at onset, but soon became negative. A complete collapse was obtained, and this man is now back at work, having no difficulties and working ten hours every day. He gets his refills of 550 c.c. of air once every twenty-one days. Temperature averaged 100°-101° at onset, after air it became normal.

Case 2. E. J., a white female, aged 21, first became ill in January, 1936, following a severe chest cold. She was working as a clerk in a hat store at the time, and began to notice afternoon fever and a rapid loss of weight. Nothing was done about her condition until about May 22, when she visited her family physician, who discovered she had tuberculosis, proving his diagnosis by sputum examination which was positive, and roentgen ray of chest which demonstrated a small cavity 4.5 cm. in diameter in the left apex. The patient was put to bed and usual rest measures begun. On June 2, she had a frank hemorrhage, losing about a pint of bright red blood from the lung. The following morning another hemorrhage equally as bad occurred, and fever went up to 102° F. Artificial pneumothorax was begun at once and the hemorrhage ceased after the first injection of air. In the course of six months a complete collapse of the lung had been procured with obliteration of the cavity. She now takes refills every fourteen days with 300-375 c.c. and is allowed to go and come as she pleases, having no difficulties whatsoever.

Case 3. F. G., a white male, aged 42, first became ill in September, 1936, following the accidental aspiration of a soda tablet. Several days following this accident he began to cough, which gradually became worse, until he coughed almost continuously and began having fever. A roentgen ray of the chest revealed a small cavity surrounded by an area of pneumonitis. He was put to bed and the usual rest therapy advocated with no improvement. Instead he went downhill very rapidly, running high fever up to 103° and coughing up large quantities of mucopurulent material. The second roentgen ray revealed marked enlargement of the cavity in the middle of right middle lobe communicating with a bronchus having a fluid level. On December 19 air therapy was begun. Marked improvement began at once, and the patient soon became ambulatory. For a long time a small band

of adhesions prevented complete collapse of the cavity; however, these adhesions parted suddenly, causing a mediastinal shift with considerable embarrassment for a short time, but allowing a complete closing of the cavity with a partial collapse. Repeated sputum analyses were negative. He was refilled every 7 days with 550-600 c.c. of air.

Case 4. A. D., a white male, aged 62, had a severe attack of influenza in December, 1936, which lasted eight days. Following his recovery from this attack he remained very weak and coughed continuously, expectorating large amounts of mucopurulent material with occasional hemoptysis. Fever gradually mounted to an average of 100°-102° F. A roentgen ray of the chest revealed a large cavity in the right apex with a fluid level communicating with a bronchus. Collapse therapy was begun January 9, 1937. Immediate improvement was noted at once. By the middle of February, after eleven refills, a partial collapse with closure of the cavity was obtained, the patient now being ambulatory. He now gets 400-500 c.c. of air every 7 days.

Case 5. R. K., a white female, aged 20, first became ill some ten or twelve months ago, following an attack of influenza. At first her only symptoms were a cough and tired feeling, with times when she would run a little fever, temperature going up to 100°-101°. In November, 1936, she began running high fever and was examined and found to have tuberculosis. She was put to bed and started on a rest cure. However, improvement was very slow due to almost continuous attacks of vomiting and fever. The sputum was loaded with acid fast organisms. A roentgen ray of the chest revealed advanced ulcerative tuberculosis of the right lung with beginning activity of the left base. Artificial pneumothorax was begun on the right chest with immediate response, vomiting and fever ceased almost at once. There is little or no coughing at present time. Partial collapse is maintained by giving 300-400 c.c. every 7 days. The multiple cavities are smaller in the right lung. The left lung shows slight improvement.

Case 6. M. H., a white male, aged 44, has been in bed under the rest treatment for tuberculosis for the past two years. The sputum is positive for tubercle bacillus. Roentgen ray of the chest revealed advanced tuberculosis of the right lung with multiple cavitation, and inactive tuberculosis of the left lung. Artificial pneumothorax was started on the right chest, obtaining a partial collapse of the right lung and cavities therein. After the first injection of air, apparently an adhesion gave way causing an opening from the lung into the pleural cavity causing a spontaneous pneumothorax. After the removal of a small amount of air, symptoms passed off and collapse therapy continued as usual with no further complications.

The prognosis of this case is undeterminable at the present time because of short time under treatment. However, improvement is evident.

SUMMARY

In closing, it is evident that the concept of collapse therapy is a sequence of procedures in the treatment of tuberculosis in addition to the fundamentals of rest, fresh air and nourishing food, the more radical being invoked as soon as the simpler ones have demonstrated this inability to cope with the problem presented.

The wide prevalence of pulmonary tuberculosis and its leading death rate illustrates forcibly the magnitude of our problem in its treatment, and the dark path of diseases was never more brightly illuminated than by the life-saving merits of collapse therapy.

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THE VAN LINT CONJUNCTIVAL FLAP IN CATARACT EXTRACTIONS*

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and

JOHN W. FISH, M. D.†

NEW ORLEANS

Van Lint described the use of the conjunctival flap in cataract extractions in 1911. Al-

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though his procedure is simple and has many advantages over other types of conjunctival flaps in common use, it has never become widely used. It is true that the operation that we shall describe and attempt to show has been modified some from the original, as described by van Lint, but the modification is so slight that we retain his name and shall not burden you with another.

The preliminary preparation and anesthetic does not vary from that of any other cataract operation. Before the corneal section is made, the upper half of the bulbar conjunctiva is dissected free from the globe at the limbus, and the conjunctiva is then undermined upward almost to the cul-de-sac by blunt dissection with Steven's scissors. Care must be taken not to button-hole the conjunctiva and not to dissect up the episcleral tissue with the flap, as a flap with a hole in it does not give the protection desired; and one with too much episcleral tissue in it does not slide down over the cornea without creating too much tension when the sutures are tied. After the flap is dissected so that it can be pulled down into position with conjunctival forceps, the two sutures are then put in: A small, fine, braided, black suture (as a Deknatel B.) is used; they are anchored well into the episcleral tissue below and far enough to each side so that no part of the suture will touch the cornea when it is tied. After it is anchored below, it is then brought up and passed through the flap from underneath, and then back again, taking a sufficient bite in the flap that the suture does not tear itself out. Care must be taken so that the temporal and nasal sutures are far enough apart in the flap so that it will not exert undue pressure on the cornea when the sutures are tied. When the sutures are in place, the flap is pulled down over the cornea with the sutures to see what position it will take. This is done before the section is made, because if any changes in the sutures are to be made, they should be made before the section.

The corneal section is made in the usual manner. An iridectomy may or may not be done, as you desire, and the lens delivered by the intra or extracapsular method. We do simple extractions and intracapsular extractions in selected cases. After the cortical debris is

irrigated out and the toilet completed, the flap is pulled down and tied; each suture being tied separately, the eyes cleansed of any blood and debris with an applicator moistened in 1-5000 merthiolate solution, and the eye bandaged in the usual manner.

ADVANTAGES OF METHOD

The advantages that are claimed for this procedure over the extraction without a conjunctival flap are:

1. It serves as a protection against infection.
2. The rapid adhesion of the conjunctival flap to the underlying tissues tends to seal the corneal section quickly and prevent iris prolapse.
3. It makes the complication of delayed union of the wound almost negligible, and there is no down growth of surface epithelium into the anterior chamber.
4. There is almost complete exemption from secondary glaucoma, a permanent filtering cicatrix rendering rise of tension practically impossible, appears to be the constant and inevitable result of any recognizable separation of corneal section under the covering of the conjunctival flap.
5. It is an extra safeguard in those patients who can not remain in a recumbent position for a long time because of their general health.
6. It seems to aid healing of the section in anemic, emaciated, and weak patients, where corneal sections usually heal badly.
7. It shortens the patient's stay in bed. It is not unusual to have the patient on a back rest the second day and up in his room the third; and, as a result, the patient's stay in the hospital can be reduced to as much as one-half of the usual time.
8. It makes prolonged bandaging unnecessary. This is of especial advantage in a warm climate, where prolonged bandaging causes skin eruptions on the lids, with secondary infections.
9. It is a safeguard in prominent eyes, where vitreous loss is imminent.
10. It is a safeguard in high myopes, where a fluid vitreous is suspected.

CONCLUSIONS

The advantages we claim for this over other types of flaps, especially those made with the cataract knife, are:

1. All hemorrhage from the incision into the conjunctiva has already been entirely stopped before the section is made.

2. The iridectomy and delivery of the lens can be made without holding up or moving an uncut bridge.

3. The entire corneal section is covered and sealed with a conjunctival covering.

The disadvantages are few and almost negligible:

1. The procedure requires more time.
2. The flap or sutures may get in the way at the time the section is made.
3. If the flap is not dissected properly and the sutures not placed properly, it may cause undue tension on the corneal section and cause non-union of the corneo-scleral wound, with a period of low tension and its sequelae and high permanent error of astigmatism.

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DISCUSSION

Dr. Noel T. Simmonds (Alexandria): I want to compliment Dr. Clark on his technical skill, which was displayed in the moving pictures.

In regard to the matter of infection, there are two types, i. e., exogenous and endogenous. Exogenous infection is introduced into the eye at the operation by instruments, and will show up within two to three days after operation. If it does occur the eye is lost. On the other hand, endogenous infection, or latent infection, usually shows up on or after the fourth or fifth day, and by cleaning up the focal infection, usually a useful eye can be saved. I do not believe that a non-motile organism such as the staphylococcus or streptococcus can get into the eye through the corneal section unassisted, the escape of aqueous humor preventing it. I therefore do not feel that this conjunctival flap will prevent infection.

As for preventing loss of vitreous, I do not see where the van Lint flap would be of value as the flap is put in place after completing the opera-

tion. About ninety per cent of the cases of loss of vitreous occur: (1) when the lens is being delivered; (2) when the anterior chamber is being irrigated, and (3) when the iris is being replaced in the eye. It occasionally occurs after the operation is over, when the speculum is being removed, which would be prevented by the van Lint flap. With this type of conjunctival flap operation all this is done without protection from the flap, and then the conjunctival flap is pulled in place after completing the operation.

I would like to ask Dr. Clark if he has any difficulty in lifting the conjunctival flap over the corneal flap in cases of prolapse of vitreous. In other words, in such a case the corneal flap is standing up and when you bring the conjunctival flap down, does it ever catch on the corneal lip?

I have personally been more inclined to a simple flap made with the Graefe knife, putting in the suture as soon as the flap is made, making a knot in it but not tying it tight until the lens is extracted, when the suture is tied tight, then irrigate the anterior chamber and do the toilet of the wound. By doing that there is protection by the flap from loss of vitreous during the later stages. However, the protection is not as complete as it would be with the complete coverage in the van Lint flap, when the van Lint flap is finally placed.

I noticed Dr. Clark used the van Lint injection of the lids. I have been partial to the O'Brien technic which leaves the lids free of edema. The few times I have tried the van Lint technic, I have been embarrassed by the edema of the lids caused by the injection of the anesthetic. When the facial nerve is injected according to O'Brien technic, the lids are perfectly paralyzed without any edema whatever. Of course, lid sutures cannot be put in. However, I use a speculum and let the assistant hold the speculum.

In conclusion, conjunctival flaps boil down to a question of individual choice, and have more or less to be modified according to the ability of the operator.

Dr. T. J. Dimitry (New Orleans): I have enjoyed greatly Dr. Clark's paper. His contribution is pleasing in that he digresses from orthodox teachings that neglect to provide secure closure for a wound to an adoption of a procedure which closes well the wound and covers it by conjunctiva.

Dr. Simmonds has expressed my views in that the wound is not closed sufficiently early to prevent prolapse of vitreous. Had van Lint provided for the four sutures to be inserted before the lens is delivered, and not after, I would feel more kindly towards the procedure.

It occurs to me as strange that Dr. Clark has not adopted van Lint's technic one hundred per cent. This great Belgium surgeon advocates the

intracapsular extraction and not the extracapsular extraction. He only resorts to the extracapsular in those younger than 60 years. Van Lint does not use a knife for the incision, but a keratome and the incision is not above but to the temporal side of the eye. I can see no advantage in having the incision on the side of the eye, though I admit it might have great value and is worthy of trial. I was in hope that Dr. Clark would have given us the story of the intracapsular extraction, and not simply a method of making an incision and covering a wound. I am an advocate of the intracapsular extraction, therefore, I can not concur with anyone who would leave a membrane that subsequently becomes opaque, to interfere with vision. Had Dr. Clark adopted van Lint fully I would feel like saying to him: "You have made great strides." However, it is not too late fully to imitate the great master.

Dr. J. L. Scales (Shreveport): I think we probably learn more from demonstrations on the screen than we do in the operating room. We are prone not to change our views on something that has come to be more or less a fixed habit. We are rather inclined to do cataract extraction as we learned it first. Therefore, some men still profess quite as good results, as far as they are concerned, from extracapsular as from intracapsular extraction.

As I view it, the van Lint conjunctival flap has not very much to do with the kind of extraction that is done. It is applicable to both, or neither, as you happen to choose, and as to the universality of extracapsular extraction, which I believe was imported to us from the East, the recent remarks of Col. Wright would lead us to believe that perhaps it is not as universally used in the East as when the method was first brought to our attention by Col. Smith, a number of years ago.

The conjunctival flap appeals to me very much indeed. It seems to be simple and it seems to be safe. The conjunctival flap for accidental wounds of the cornea is the most conservative method in use. As soon as I get home, I have to do an extraction on a man with very bad lids, an ectropion, the result of scar tissue that cannot be corrected before cataract extraction. I have thought of it with fear and trembling. I am going to take out that lens and cover it with a conjunctival flap. I think it will give more satisfaction.

Dr. Clark (In conclusion): I will say that I had no intention of leaving the impression that the van Lint flap was any substitute for errors in aseptic technic. However, I do say that it helps seal the operative wound and prevent the washing in of debris that may contain bacteria. It must be remembered that, after the extraction of a lens, there is a negative pressure within the

eye due to the loss of some of its contents, and it is very easy, with the eye in this state, to have foreign material washed or drawn into the globe.

As far as the flap being a help in vitreous loss, I had this forcibly impressed on me at a time when I removed a lens dislocated into the anterior chamber. A small keratome incision was made and enlarged with the Steven's scissors in order to extract the dislocated lens. As soon as the keratome incision was made, vitreous presented, and by the time the lens was extracted the sectioned cornea was held in almost a vertical position by the bulging vitreous. The flap was pulled down and tied, and, with a little massage with an iris spatula under the flap, the corneal section went back into place and the wound healed promptly with the minimum amount of deformity.

The subject of intra- and extracapsular extraction was not discussed in this paper. For eye physicians to discuss this matter before a group composed mostly of general surgeons would be like you general surgeons discussing the relative merits of removing the appendix through a right rectus or a McBurney incision before a group of eye, ear, nose and throat men.

I recommend this procedure especially to the occasional operator. It gives him a safeguard that he will appreciate if he once tries and masters the technic.

THE DIAGNOSIS AND TREATMENT OF ACUTE MASTOIDITIS*

CHARLES L. COX, M. D.†
NEW ORLEANS

The purpose of this paper is to review the salient points in the diagnosis and treatment of acute mastoiditis, to stress the importance of early diagnosis and recognition of atypical cases and strongly to recommend the open method of treatment in operative cases.

Usually acute mastoiditis occurs as a complication of measles, scarlatina, influenza, pneumonia, and ordinary head colds. The hemolytic streptococcus has been found to be the etiologic organism in 65 per cent of the cases, pneumococci in 25 per cent of the cases, miscellaneous micro-organisms in 15 per cent. Many factors such as anatomical variations in the mastoid itself, the resistance of the patient and the virulence of the infection, and time of operative

interference affect the incidence and the outcome of the mastoid infection.

The diagnosis of acute mastoiditis is, fortunately for the patient, comparatively easy to make in most cases, but I am convinced that an increasing number of atypical cases are daily overlooked, or undiagnosed, and are the cause of more fatalities than we care to admit. Every case of running ear carries with it the potential danger of a mastoid infection, and I might add that I have never seen a mastoiditis in which there had not been present an active suppurative otitis media or the history of a discharging ear in the very near past. However, cases of mastoiditis have been reported where the drum was reddened but never perforated.

Petit, the French surgeon, in about the year 1740, is credited with being the first to operate on the mastoid for caries. Schwartz in 1873 is responsible more than any other for the diagnosis and treatment of mastoiditis along anatomical and pathological lines. Since his day the mortality from this disease has steadily declined until the present day when a mastoidectomy in the hands of a skilled otologist is not the dreaded thing to physician and layman alike that it formerly was.

In an examination of a case of suspected mastoiditis it must be remembered that there are anatomical variations between the mastoid of an infant and that of an adult. At birth the antrum is full size but the mastoid cells do not develop until after the second year. Occasionally exceptions to this will be found. The mastoid antrum in children is closer to the outer cortex and the sutures are not tightly closed. Hence a deep infection can escape easier in children than it can in adults and the dangers of intracranial complications are lessened. For this reason, in ordinary cases in children, there is more time in which to temporize if the operation does not seem to be urgent. Older patients must be treated differently. The time margin of safety in these cases is not nearly so long, and in adults the outer cortex is much thicker, the bone is much more compact, the antrum is deeper, and the sutures closely knit. All this tends to prevent the escape of pus outwardly, and renders the infection much more likely to travel towards the cranial cavity.

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

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Consecutive radiographs are indispensable in doubtful cases not only to tell what type of mastoid is being dealt with, but also in noting the position of the lateral sinus, any change in the character of the exudate, and increase or decrease in the carious process. The three types of mastoids, the pneumatic, the diploic and sclerotic and combined types are readily diagnosed by the roentgen ray. It should be remembered that the roentgen ray shows no change in the hemorrhagic type of mastoid.

OTITIS MEDIA

The history of otitis media is an important aid in making the diagnosis in mastoiditis. Any running ear of five weeks' duration without any constitutional symptoms is assumed to be mastoiditis. In young infants it is common to have elevated temperature for at least a week after tympanotomy, but, according to Kopetsky, in any case of otitis media that shows a rise in temperature greater after the tympanotomy than before and without other complicating causes, mastoiditis should be suspected in that individual. In a case of otitis media in which the discharge from the ear has suddenly ceased, and where the symptom of pain over the mastoid and the elevation of temperature are exaggerated, the diagnosis of mastoiditis is evident.

DIAGNOSIS

A sudden copious purulent discharge in a case which had seemed about well coupled with an increase of pain, redness, and swelling over the mastoid, with an elevation of temperature, points definitely to mastoiditis. The three classical areas of pain on pressure in mastoiditis are the emissary vein, the mastoid antrum, and the mastoid tip. Pain, however, is not always a reliable symptom, and the absence of this symptom does not preclude the possibility of mastoiditis. I feel that many cases of mastoiditis are undiagnosed until intracranial complications arise because too much emphasis is laid on the absence of pain on pressure. Pneumococcal mastoiditis rarely shows any pain on pressure. The temperature is usually very high and there is a copious discharge from the middle ear. This type of infection is especially dangerous and is practically always fatal if allowed

to progress until an intracranial complication arises.

Every case of suspected mastoiditis should have a complete laboratory survey, including a culture from the middle ear. The total white count in mastoiditis rarely goes over 14,000.

The principal objective sign that most otologists stress in acute mastoiditis is a sagging of the external auditory canal near the drum in the posterosuperior quadrant. This is brought about by an involvement of the peri-antral cells with a resulting peri-ostitis in the neighborhood of the posterosuperior quadrant of the drum. Too much stress should not be laid on the absence of this sign, however, because of occasional anatomical variations. The presence of early facial paralysis or cerebral irritation in a case of otitis media should make one consider early operation.

The principal conditions which might be confused with acute mastoiditis are furunculosis of the external auditory canal, otitis externa and suppurative postauricular adenitis. In furunculosis, the solitary abscess can usually be seen in the canal wall and the drum is found to be intact. Otitis externa is sometimes more difficult to differentiate as the whole canal is markedly swollen. The outer ear is also markedly swollen and the slightest movement of the auricle elicits pain. In suppurative postauricular adenitis it is often necessary to incise the abscess down through the periosteum before one can be sure that he is not dealing with a ruptured mastoid.

TREATMENT

Certainly not every case of mastoiditis must be operated on. As in all branches of surgery the otologist must exercise good judgment. Mild cases of mastoiditis often subside by giving more adequate drainage through the middle ear, and by the frequent injections of foreign protein intramuscularly. It should be remembered that the hemorrhagic mastoid should be operated on as soon as the diagnosis is made, as early involvement of heart, kidneys and joints makes this condition fatal unless operated on early. In ordinary cases if, after a reasonable amount of delay, it is found that the patient is not responding to conservative treatment, it behooves the surgeon to consider mastoidectomy

not only from the standpoint of a life-saving measure, but to prevent loss of hearing in the diseased ear and a chronically discharging ear.

In making the mastoid incision try to avoid the facial nerve in young individuals by making the incision at least half an inch posterior to the usual one made in adults. This is a most important point to consider, for an error in technic, whereby the facial nerve is severed, might possibly change the whole economic and social status of that individual later in life.

In removing the outer cortex most otologists agree that it is safer to avoid injuring the lateral sinus by removing the cortex at the tip, and working upwards. The sinus plate should never be disturbed if found healthy, and all diseased cells should be removed and the antrum opened. Great care should be exercised that, in one's ardor to be too thorough, the facial nerve is not injured while working in the antrum. No less an authority than Ruttin states that it is impossible to remove every mastoid cell at operation, and, while I do not advocate leaving any diseased cells, I feel that since the main object of the operation is to promote drainage we should let well enough alone as soon as all apparently diseased cells have been removed during the opening of the antrum.

The mastoid wound should be left open and packed lightly with vaseline gauze, and a wick should be left in the mastoid antrum. Sometimes it is advisable to put two sutures in the upper angle of the wound to prevent sagging of the auricle. This type of treatment will take much longer for the mastoid to heal, and the cosmetic appearance is not always comparable to the closed method of treatment. But it is to the best interest of the patient to leave the wound open, as it allows the middle ear and antrum to drain, thereby preserving the hearing, and lessens the chance of intracranial complication. Many observers, including Arbuckle and Shea, believe that the increased cases of petrositis occurring after the third week of operation are due mainly to closure of the mastoid at the time of operation.

SUMMARY

1. Be on the alert for atypical mastoid infections.
2. Do not delay the operation too long.

3. Leave the mastoid wound open.

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DISCUSSION

Dr. L. W. Alexander (New Orleans): Dr. Cox has presented his subject in a concise yet thorough manner. It leaves the discussor only to elaborate on the facts as he has portrayed them to us in his paper. I would like to emphasize his point regarding early roentgen ray studies in acute otitis media. At this early date cell destruction is not expected to be found, but, of equal importance, it is necessary to learn the structural type of mastoid process with which one is dealing and from this structural type the line of treatment is frequently formulated. If the pneumatic cells prevail it will be reasonably safe to await coalescence before resorting to surgical measures; if the diploic type, the pathology is that of osteomyelitis, and early surgical intervention in this instance is often advisable. If a sclerotic process is noted other complications may be feared but not those referable to the mastoid process.

The essayist states that frequently and especially in children, postauricular swelling and fluctuation is observed. I have found aspiration for bacterial study valuable in making a differential diagnosis. When the infection has passed from the external auditory canal, the staphylococcus is found; if from the middle ear by way of the mastoid, the staphylococcus is only rarely the prevailing organism; if from the former, the pus is found subcutaneously, in the latter subperiosteally.

I would like to call your attention to the fact that the cells above and behind the horizontal and post-superior canal form the most frequent route of extension to the petrous pyramid from mastoid infection. Careful inspection of this region at the time of the simple mastoid operation will probably save trouble later in this dangerous area.

It seems proper to re-emphasize the importance of the more open postoperative treatment. A good rule is to insure open and free mastoid drainage until the external canal is entirely free from discharge.

In handling mastoid disease it is well to remember that the typical text book case is rare, that there are innumerable avenues for escape of the infection from the tympanic cavity and mastoid cells to dangerous contiguous structures and

only by being alert to use all diagnostic and surgical procedure at our command may we hope to control the ever potential danger of serious complications.

Dr. W. L. Atkins (Shreveport): I agree with Dr. Cox in the early operation for acute mastoids, that is, before the mastoid cells break down and involve more serious areas. So often the otologist waits until the ear becomes a chronic suppurative otitis media, and this stage may require a more radical operation than if done earlier.

If mastoids are not operated on before these more serious areas are involved there is likely danger of brain abscess, meningitis or some other complication that may give the physician much to worry about.

Due to the early tympanotomies by the pediatricians and laryngologists, many mastoids are prevented. In the chronic discharging ear, a mastoidectomy should be done in order that the least impairment of hearing will result.

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AMERICAN MEDICINE: EXPERT TESTIMONY OUT OF COURT

In the report of President Kostmayer to the officers and members of the House of Delegates at the meeting in Monroe, he presented among many other thoughtful suggestions the idea that the Committee on Medical Economics should seriously study the volumes just issued by the American Foundation, Incorporated. These two volumes entitled "American Medicine: Expert Testimony out of Court", as Pres-

ident Kostmayer has said, are most thought provocative and also filled with many factual data. In order that the members of the Louisiana State Medical Society might have some knowledge of the contents of this book a rather brief abstract is presented on these pages, together with some comments on the information obtained in the work.

The American Foundation Studies in Government have, in the past, had to do largely with international law and international relations. Switching rather abruptly from their former objective, the study of certain international factors in government, the Foundation has seen fit to undertake a collective research on innumerable problems of medical care and medical service in this country. In order to obtain an answer to what the Governing Committee thought was the most vital problem in our present day economic and medical life, a large group of physicians in this country were circularized and their opinions obtained on a large series of subjects having to do with medical practice, medical education and the care of the sick. In this group of contributors to the inquiry, approximately 2,100 men submitted responding letters to the number of 5,000. These men came from every state in the Union. One-fourth of the contributors have teaching connections with grade A schools; 289 are listed as general practitioners; 36 per cent of the contributors are in general practice, internal medicine and pediatrics; 38 per cent are surgeons; 3 per cent are specialists in eye, ear, nose and throat work or in psychiatry, neurology, nervous and mental diseases. The remaining members of the group represent specialists in other fields. Practically all of the specialists are members of national specialist societies. A criticism might be that the two volume work represents the opinion of men who are not coming into active contact with problems of the general practitioner, there being only 289 so listed.

The plan of the work was to propound certain questions. From the answers received from those who have seen fit to respond, individual expressions of opinion are quoted to a very large extent. For example, in the first chapter there are 24 excerpts on the first five pages from letters of contributors. Roughly the same proportion holds good throughout the two volumes

of the book. At the end of a given chapter there is often incorporated a summary of the expressed opinions with brief comments. It must be understood definitely there is no attempt made by the compilers of the work either to confirm the opinions or to express a dogma. Their definite purpose is merely to summarize the opinions of a representative cross section of the medical profession.

An immense amount of material has been collected in the 1,290 pages of the book. In addition to the subjects devoted entirely to the province of medicine, there are a group of appendices which occupy 45 more pages. It is obvious that extended comment cannot be made on all the matters presented. Suffice it to say that these questions are dealt with extremely minutely. As an example, in chapter two, which has to do with the general principles and considerations that should underly the organization of medical care, there are nine sub-sections, ranging from such subjects as payment by the individual in accordance with the capacity to pay, to "the public conception of health as a controlling factor." In spite of the difficulty of analyzing such an immense amount of material there are several high points which might be accentuated. The conclusion concerning adequate care is that this is a distinct problem which is complex and difficult of solution but which must be solved.

In the chapter on medical education, the datum shows that recent advances in medical education have been notable, that in all likelihood standards should be raised and substandard schools closed, that more money is needed for schools in order to make the scientific and social standards required; that the number of medical students should be limited further than it is at the present time, and that the students should be selected more carefully than now done. Pre-medical education, it is the opinion of many of the contributors, should be broader and less rigid than it is at the present time. The medical curriculum is dealt with in some 90 pages. The cost of postgraduate education, research in medical schools and licensure and its control are also presented in this section. In chapter four the conclusions that may be drawn from a large number of accumulated facts are that there are too many poor specialists and

not enough good ones, that the practice of specialism must be improved and that general practitioners should make use of the specialist when he is needed for the good of the patient, if properly trained.

The summary of the chapter on group practice implies that such type of practice is excellent provided it affords better medical care.

Chapter six deals with "the place of the hospital." In this section are discussed a variety of topics such as the need of a community hospital, the finances of a hospital including the future financing of hospitals, their location, hospital organization with consideration of the staff as a whole, more particularly the professional services rendered by doctors and nurses, and a variety of other problems which are of considerable interest to the profession but probably of greater interest to hospital administrators.

The succeeding chapter deals with public health organization and is so arranged that it correlates with chapter two and chapter eleven. The consensus of opinion from the contributors to this chapter seems to be that the chief fault of public health organizations at the present time is lack of a qualified public health personnel. Another section of the book deals with methods that have been tried in organizing medical services to the indigent and to the great group of patients whose ability to pay for medical services is distinctly and decidedly limited. This brings up, of course, the question of state medicine and here a variety of opinions are expressed. This section is presented with very little comment and represents largely quotations from a large number of the contributors. Subsequently a chapter on state medicine is presented and an intervening chapter on health insurance. Here again, as with state medicine, is a vast variety of opinions from the men who expressed their ideas; some think health insurance is good, some think it is bad. On the whole the prevalent opinion of the majority seems to be that it is unwise, whereas with hospital insurance the support on the whole is quite general. In the final chapter already mentioned and dealing with state medicine in a limited sense, the impression seems to be general that this is a process of evolution which progressively will continue; that there should be coopera-

tion between the various state health departments and scientific medicine; that preventive and curative problems of scientific medicine are beyond the scope of ordinary private practice and should be integrated with public health services more closely than they are now and finally, omitting from the review a large number of other thought-provoking problems which are discussed, suggesting that government should support research in order best to attain what private philanthropy is now doing, carrying on investigative studies in all fields of medicine.

This monumental two volume work could only be adequately reviewed in many more words than space permits in a journal of this size. It might be said in conclusion that this seems to be a really outstanding study presented impartially and without bias from the information secured by correspondence with doctors in every branch of medicine. The severest criticism from the average practitioner might be that certain groups predominated and that the book actually does not represent the opinion of the profession as a whole. This criticism may be dismissed from serious consideration because of the impossibility of securing enough active practitioners of medicine who could give the time and thought to answering the innumerable questions that might have been presented to them by the compilers of this medico-social-economic investigation.

PRURITUS ANI

One of the most annoying disorders that is a cause of extreme disturbance to patients, from time to time, is anal itching. This symptom at times is so upsetting, particularly as it is so often worse at night, that it may seriously interfere with the patient's sleep and consequently his health. While there is usually a certain amount of itching with hemorrhoids and other local recto-anal abnormalities, according to Riddoch*, pruritus ani is more severe than is present in most instances in which there can be demonstrated grossly obvious pathologic changes. Sometimes, however, thickening of the skin may be observed and superficial cracks radiating from the anus. A traumatic derma-

titis may result from the continued scratching.

A variety of causes have been attributed to this distressing symptom. Some writers say that it is due to some local cause, others denying this, hold that it possibly may be due to a local cause but the physician cannot recognize it. Of the host of etiologic factors no one has been definitely implicated up to the present as solely responsible for the disorder.

To study this condition Riddoch made microscopic sections from the skin in and about the anus. It was found to be lichenified to a certain extent, the epidermis sometimes being twice its normal depth. There was dilatation of the blood vessels in the cutis, especially of the veins, and a certain amount of edema as well. In some instances there was lymphocytic infiltration of the papillae and the subpapillary layer. The author concludes that, as result of certain pathologic states, the condition fundamentally depends upon local venous stasis. This certainly would account for the greater degree of discomfort at night than in the day, namely the difference between venous stasis when the patient is in the erect position and when he is lying down.

With some knowledge of the possible fundamental cause, treatment to overcome this cause should be of value. The author recommends the injection treatment such as is employed in the management of internal piles. It has been noted that pruritus ani will sometimes disappear after the injection of symptomless internal hemorrhoids. Even if hemorrhoids are not present injection treatment works satisfactorily "by destroying the veins of the internal hemorrhoidal plexus and relieving back pressure on the internal hemorrhoidal veins." The results obtained with this treatment are, for the most part, quite satisfactory.

External applications are of little value in the management of pruritus ani. Their uselessness may be judged from the number that have been recommended for treating this condition. In very mild cases sometimes solutions of anesthetics in oil will help; in the more severe instances, the attempt to cure will probably have to be some more radical procedure, such as suggested by Riddoch, than the ordinary local applications, vaccines, x-ray or other physical measures.

*Riddoch, J. W.: Pruritus ani, *The Lancet*, 232:919, 1937.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC

NEW ORLEANS

At a meeting held in July, Dr. J. M. Perret presented the following paper:

UNDULANT FEVER

Synonyms. Undulant fever, like tularemia which it resembles in certain respects, is rich in synonyms; thus it is also known as Malta fever, Mediterranean fever, Cyprus fever, Gibraltar fever, Neapolitan fever, Danube fever, Bruce's septicemia, Bang's disease or goat fever. The geographical names indicate the original habitat of the disease. Undulant fever is the best descriptive clinical name.

Definition. The disease is infectious and contagious and is characterized by a fever curve of an undulating type which may last weeks, months or years and which may have many remittances.

Etiology. The causative organism may come from goats, caprine type, *Brucella melitensis*; from cows, bovine type, *Brucella abortus*; or from swine, porcine type, *Brucella suis*. The clinical symptoms produced by them are the same.

History. The disease is said to be an ancient one and the Father of Medicine is thought to have been familiar with it. Bruce, in 1886, discovered the organism which now bears his name. Eighteen years later it was found that the principal source of the organism was infected goat's milk. In 1897 Wright and Semple showed that the diagnosis could be made by the agglutination test. This knowledge enabled the British to eradicate in a spectacular manner the disease in their troops in the Island of Malta and thus write a brilliant and interesting chapter in the history of modern sanitation. Bang, in Germany in 1897, isolated an organism from aborting cows and in 1918 its pathogenicity for man was recognized. It had taken eighteen years to find out the source of infection after Bruce had discovered his organism and it took twenty-one years after Bang had discovered his organism to establish its pathogenicity for man. Traum, in 1914, isolated the organism from aborting pigs. C. F. Craig, in 1904, recognized the first case occurring in the United States. When many of us were medical students the disease had for us merely an academic interest. We knew what it was and that it occurred in countries about the Mediterranean Sea. During the past decade, however, we have learned that the disease is an important one and that it has a world wide distribution.

Last year two cases of undulant fever presenting unusual symptoms came under my observation and aroused fresh interest in the disease. One of these had osteomyelitis and the other meningitis. They have been reported from the J. T. Nix Clinic in

this Journal.* It seems to me that enough interest has not been taken in the disease and not having kept it in mind, no doubt many cases have not been recognized. In 1928 we had records of two cases at the Charity Hospital. Since 1929 the disease has been made reportable in Louisiana. The first case at Hotel Dieu was in 1933, and in the same year the first case was seen at the J. T. Nix Clinic.

Modes of Infection. Man becomes infected through the alimentary canal and the skin. Milk, milk products, and the direct handling of infected animals are the common sources of infection. Feces, urine and other discharges may spread the disease. Abrasions, wounds, and warts may be portals of entry. The prick of a needle and the thermometer have been known to spread the disease. In this country the bovine infection is the most important; the patient usually acquires the disease from drinking milk from infected cows. Packing house employees and farmers are the ones most likely to be infected with the porcine type. In this country the caprine source is not as important as it is in European countries where goat milk and its products are extensively used. Many laboratory workers have become infected. There is no proof that flies, mosquitoes or fleas are important in spreading the disease. The most susceptible ages are said to be between six and thirty years. The age incidence has been higher in our cases. The organism of undulant fever may live eighty days in dust and a month in fresh or salt water.

Incidence in Cattle and Man. There is considerable variation in estimates of the incidence of infection in cows from 5.8 per cent to 36.7 per cent. It is estimated that 25 per cent of the dairy cattle in Canada are infected. In Great Britain 20 per cent to 30 per cent of the raw milk contains *Brucella abortus* organisms but undulant fever is uncommon in that country.

As to the incidence in man, it is difficult to give any definite figures. Probably about 5 per cent of the population would give a positive agglutination test. It may be suspected that not more than 2 per cent of infected individuals are ill. Packing house employees, veterinarians and others coming in contact with animals susceptible to the disease give a high incidence of positive agglutination test; this has been as high as 84.6 per cent in veterinarians, none of whom had had the disease.

When one considers the high rate of infection in many dairy cows, the wonder is not that we have some cases of undulant fever, but that we do not have more. Thus F. M. Smith, of Mississippi, tested between three hundred and four hundred cows, 40 per cent to 50 per cent of them were in-

*N. O. Med. & Surg. J., 88:719, 1936.

fects, yet there were no cases of undulant fever at that time in human beings in the state. Again, a dairyman with two hundred customers had three cases of undulant fever along his route. It seems reasonable to suppose that we acquire an immunity in this as in many other infections by becoming inoculated with repeated small doses of the germ. Infants and very young children seem to enjoy an immunity. In 1933 Hauptman and Eberle found only thirty recorded cases in early childhood. They reported a case of a child three and a half years old with a positive blood culture and this was the first case in which a blood culture was positive in a child less than five years old.

In Louisiana the legal standards for certified milk require the Bang test (undulant fever). There are no such requirements for Grade A milk or market milk.

INCIDENCE OF HUMAN CASES

Year	U. S.	Louisiana	Charity Hospital	Hotel Dieu	J. T. Nix Clinic
1925	24	---	---	---	---
1926	46	---	---	---	---
1927	217	---	---	---	---
1928	649	---	2	---	---
1929	1,301	17	0	---	---
1930	1,453	20	0	---	---
1931	1,578	59	4	---	---
1932	1,502	35	8	---	---
1933	1,788	28	11	1	3
1934	2,017	54	9	1	4
1935	---	50	16	5	2
1936 (to March)	---	---	---	3	1
<hr/>					
	10,575	263	50	10	10

Prior to 1925 a total of 128 cases had been reported. Of the ten Hotel Dieu cases three were Clinic cases, which makes the number of cases that have come under the care of the Clinic thirteen. Subsequently to March, we have had four more cases during 1936, bringing up our total number to seventeen.

HOTEL DIEU CASES

Year	Sex	Age	Location	Agglut.
1933	M	38	New Orleans	+
1934	F	45	New Orleans	—
1935	F	35	New Orleans	*
1935	M	12	Opelousas	—
1935	F	23	New Orleans	+
1935	M	55	New Orleans	+
1935	M	10	Napoleonville	—
1936	M	56	Gretna	+
1936	M	33	Houma	+
1936	F	22	New Orleans	+

*No test made, sent in for transfusion.

J. T. NIX CLINIC CASES

Year	Sex	Age	Location	Agglut.
1933	M	9	Houma	+
1933	F	47	Thibodaux	+

1933	F	46	Thibodaux	+
1934	F	56	Kaplan	+
1934	F	34	Napoleonville	+
1934	M	3	Donaldsonville	+
1934	M	11	New Orleans	+
1935	F	27	New Orleans	+
1935	F	10	Irwinville	+
1936	F	25	New Orleans	+

Subsequent to March

1936	F	34	Villa Platte	+
1936	F	33	Natchez, Miss.	—
1936	F	35	Amite	+
1936	F	27	Napoleonville	+

It is hard to estimate the financial loss caused by undulant fever in both men and animals. In 1932 it was calculated that it cost Illinois stockmen between five and six million dollars annually.

Clinical Course and Diagnosis. The classical case of undulant fever has a remarkable fever curve. It is an irregular fever which has intermittent waves or undulations of a distinctly remittent character. These undulations last one to three weeks as a rule. There is then a period of a few days free of fever, after which fever returns. Fever is the one characteristic of the disease, but the classical type described above is not so commonly found. The case usually runs a septic type of fever and this should make us suspicious when we find no obvious cause to explain it.

Other symptoms are arthralgia, sweats, chills, gastrointestinal upset, abdominal distress, nausea, vomiting, skin eruptions of a macular or papular type. The abdominal symptoms have caused patients with undulant fever to have operations performed on their appendices and gallbladders. Complications, such as mastitis, oophoritis and orchitis may occur. It must be kept in mind that few diseases are so protean in their manifestations. The disease has been mistaken for tuberculosis, malaria, typhoid fever, typhus fever, influenza, sepsis, subacute bacterial endocarditis, meningitis, tularemia, Piel's crisis of Hodgkin's disease.

As a matter of fact undulant fever is seldom recognized when first seen, some other diagnosis is usually made and it is only after further study of the case that the correct diagnosis is reached.

Whenever confronted with a long fever of obscure origin, we should think of the possibility of undulant fever and request an agglutination test. If we have eliminated the common causes of long fevers, such as typhoid, malaria, tuberculosis, tularemia, sepsis, and if the patient has arthralgia, sweats and chills and shows a sufficiently strong positive agglutination reaction for undulant fever, we are thoroughly justified in diagnosing undulant fever. A good deal of discretion must be used in evaluating the agglutination test. A weakly positive reaction must not be given too much weight in the absence of clinical symptoms as it may

indicate asymptomatic or symptomatic undulant fever acquired months or years previously. Normal individuals sometimes respond to development of agglutinins in the blood without accompanying illness. Again, in certain cases negative agglutinin reactions may be of little significance because agglutinins may be lacking from the serum even in severe cases in which the organism may be cultivated. Tularemia and undulant fever give cross reactions. This happened in one of our cases. Again, a patient may give a negative reaction which later becomes positive, or a positive reaction may later become negative and still later on become positive.

In about 5 per cent of individuals agglutinins fail to develop. In such cases it is well to try the skin test. It is said that in the early cases a positive blood culture can be obtained in about 20 per cent of the cases.

Treatment. There is no specific treatment. The treatment is symptomatic; rest in bed, nourishing and easily digestible food, good hygiene, good nursing and transfusion when indicated, form the backbone of the treatment.

A mere mention of some of the therapeutic measures that have been tried forms a formidable array; to mention only a few: biotherapy, sera; vaccines, autogenous and stock; detoxified vaccine with antiserum; brucellin, Spicer's Edwenil; foreign protein therapy, typhoid vaccine and milk injections; autohemo therapy. Drugs: mercury, quinine, thionin, mercurochrome, methyl violet, methenamin, neoarsphenamin, novarsenbenzol, acriflavine, gold preparations, osarol, carbolic acid. Roentgen irradiation to the spleen is also used.

It is a good idea to use a stock vaccine as it may do some good and will do no harm. As the vaccine is commercially available, the patient or his family will probably expect it to be used, and if it is not used they may suspect that the attending physician is not familiar with it.

One of my cases which at the onset I diagnosed influenza received a "cold vaccine" and did as well with it as the cases of undulant fever which I had treated with undulant fever vaccine.

The multiplicity of the therapeutic measures tried in undulant fever is proof positive to the seasoned practitioner of the unsatisfactoriness of the therapeusis of the disease.

ST. JOHN HOSPITAL

LAFAYETTE

The regular monthly meeting of the Staff of the St. John Hospital, Lafayette, was held on July sixth, fourteen physicians being present. As a preliminary to the meeting, films on phrenicectomy and phrenic crushing, hernioplasty, and hernioplasty and lipectomy were exhibited. A report of a case of hernioplasty and lipectomy in a woman weighing 375 pounds and with a strangulated hernia was made by Drs. L. A. Guidry and O. P. Daly. The operation performed was a hernioplasty with the removal of approximately 25 pounds of abdominal fat. The convalescence was uneventful.

A case of strangulated right inguinal hernia, with diverticulum of the bladder extending down into the scrotum was reported by Drs. O. P. Daly and R. Kapsinow. The operation consisted of a hernioplasty with resection of the diverticulum at the vesical opening, with satisfactory results.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of August virtually everything is suspended—the Society is in vacation and all hospital staff meetings are over for the summer months.

The Board of Directors will meet Monday, August 2, due to the fact that no meeting was held in July and several important matters must be settled.

March 7, 8, 9, and 10, 1938, are the dates selected for the second New Orleans Graduate Medical Assembly. Headquarters will be at the Roosevelt Hotel, and all sessions will be held in the hotel. Plans for a new auditorium to be constructed on the mezzanine floor of the hotel are being made, and it is hoped that this auditorium will be completed in time for the meeting. It is

anticipated that a much larger number will be registered at this next meeting.

The Extension Committee of the New Orleans Graduate Medical Assembly is anxious to secure the names of those of its members who are willing to address members of various parish and county medical groups in Louisiana and the neighboring states. Those interested are urged to send the names of the subjects on which they will talk and state how far they are willing to travel. Dr. Thomas B. Sellers, Chairman of this Committee, will be glad to receive your letters.

Arrangements are progressing very satisfactorily for the coming meeting of the Southern Medical Association, November 30-December 3, according to Dr. Lucien A. LeDoux, General Chairman. The

preliminary program indicates a most interesting as well as instructive session, and, with the largest advance reservations on record, it is gratifying that the meeting will be well attended.

The New Orleans Day program, which will open the Southern Medical Convention on November 30, is fast rounding into shape, and a splendid program has been scheduled.

Dr. Aldea Maher was certified by the American Board of Pathology without examination at the Atlantic City meeting which she attended recently.

Dr. Rigney D'Aunoy addressed the Members' Council of the Association of Commerce on Thursday, July 1, giving an official explanation of the Charity Hospital project.

Dr. Earl C. Smith left July 3 for the University of Chicago Lying-In-Hospital where he did special work in obstetrics.

Dr. Don Julian Graubarth attended the clinics and participated in the discussions of the Residents' Reunion of the Children's Hospital of Cincinnati, Ohio, from July 14 to 19, inclusive.

Dr. Donovan C. Browne and Dr. Daniel N. Silverman attended the American Gastro-Enterological Association at its fortieth annual meeting in Atlantic City.

Dr. M. T. Van Studdiford attended the meeting of the American Dermatological Association.

Drs. George H. Hauser, Edwin H. Lawson, W. H. Seemann and Emmerich von Haam attended the meeting of the American Association of Clinical Pathologists.

Dr. J. T. O'Ferrall attended the American Orthopedic Association meeting in Lincoln and Omaha, Nebraska, June 2 to 4.

REMOVALS

Dr. C. F. Bellone from 719 to 712 A. Maison Blanche Bldg.

Dr. Frank Brostrom from 647 Canal Bank Bldg. to 3704 Prytania Street.

Dr. P. E. Prouet from 719 Maison Blanche Bldg. to 914 Canal Bank Bldg.

Dr. M. Lyon Stadiem from 1212-14 Union Bldg. to 1102 Canal Bank Bldg.

Dr. E. Garland Walls from 1124 to 619 Maison Blanche Bldg.

We regret to report the death of Dr. M. David Haspel, an Active Member; and Dr. John W. Lindner, an Honorary Member.

Of particular interest to the membership is the financial report of the Society, a tentative set-up of which is herewith presented:

TREASURER'S REPORT

Actual Book Balance: March 31, 1937.....\$3,776.16

CREDITS

April	\$1,000.89
May	470.41
June	578.29
	<hr/>
	\$2,049.59
	<hr/>
	\$5,825.75

EXPENDITURES

April	\$ 958.74
May	681.58
June	785.89
	<hr/>
	\$2,426.21

Actual Book Balance: June 30, 1937\$3,399.54

Although a larger number have paid their entire indebtedness for the year at this time than at the same time of 1936, it is urged that all members make a concerted effort to pay the amount to the Society for the second half of the year before August 15. It is certainly not asking too much nor exerting any hardship on a member to request that he forward six dollars (\$6.00) for the second half of 1937 to the office of the Society at once. By having these funds available the Society is in a position to participate in any professional or civic movement without delay, and can also liquidate indebtedness as it arises.

LIBRARIAN'S REPORT TO BOARD JUNE, 1937

The Library has loaned to doctors during May and June, 1,734 books and journals, or more than 3 to each member of the Society. In addition, 1,149 items have been loaned to students for overnight use, making a total of 2,883. These figures do not include the great use of books and journals within the Reading Rooms.

During the month, 179 volumes have been added to the Library. Of these 102 volumes were received by binding, 41 from the New Orleans Medical and Surgical Journal, 15 by purchase and 21 by gift. New titles for May and June are listed herewith.

On request of physicians, members of the staff have collected material on the following subjects.

Bacillary dysentery
Spinal anesthesia
Traumatic pneumonia
Recent works on coronary thrombosis
Differential diagnosis of choked disk and papillitis.
Sodium chloride in prevention of heat prostration.
History of antiseptics
Personal bibliography of J. A. Danna
Personal bibliography of E. R. Bowie
Incisional hernia

Schmorl's disease
 Diverticulitis of the sigmoid
 Blood transfusion in puerperal infection
 Insulin shock in schizophrenia
 Diabetic surgery
 Tuberculosis of the female genital tract
 Chemistry of dyes
 Euthanasia
 Immediate preoperative and postoperative care

During the months of June-September, the Library is closed in the evenings. Members who are unable to come to the Library during the day, may, by telephoning before five o'clock, have books left for them to call for, at the Information desk on the first floor.

NEW BOOKS—JUNE, 1937

Macalpine, J. B.—Cystoscopy and Urography, 1936.

Atkinson, D. T.—Ocular Fundus in Diagnosis and Treatment. 1937.

Langerhans, Paul—Contributions to the Microscopic Anatomy of the Pancreas (translation). 1937.

Norcross, Carl—Vocational Rehabilitation and Workmen's Compensation. 1937.

Wokes, Frank—Textbook of Applied Biochemistry. 1937.

Bromberg, Walter—Mind of Man. 1937.

Burns, B. H.—Recent Advances in Orthopedic Surgery. 1937.

Saxl, N. T.—Pediatric Dietetics. 1937.

Van Dyke, H. B.—Physiology and Pharmacology of the Pituitary Body. 1936.

Mackee, G. M.—Skin Disease in Children. 1936.

Goodman, Herman—Cosmetic Dermatology. 1936.

Orton, S. T.—Reading, Writing and Speech Problems in Children. 1937.

Sayes, M. B.—Problem Child at Home. 1932.

U. S.—Public Health Service—Proceedings of the Conference on Venereal Disease Control. 1937.

Zahorsky, John—Synopsis of Pediatrics. 1937.

Horsley, J. S.—Operative Surgery. 2v. 1937.

Conybeare, J. J.—Textbook of Medicine. 1936.

Joslin, E. J.—Treatment of Diabetes Mellitus. 1937.

Mayo Clinic—Collected Papers. 1935.

Bryant, John—Convalescence. 1927.

Beaver, P. C.—Experimental Study on Echinostoma Revolutum. 1937.

Bonner, V.—La lutte contre la prostitution en U. S. S. R. 1937.

A. M. A.—Congress on Medical Education. Proceedings. 1937.

Gilbert C. Anderson, M. D., Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

TRI-PARISH MEDICAL SOCIETY

The regular meeting of the Tri-Parish Medical Society was held at Lake Providence on July 6, 1937. Those present were: Drs. J. Preston Davis, president of the society, B. C. Abernathy, G. S. Hopkins and William H. Hamley of East Carroll; Drs. D. W. Kelly and E. D. Butler of West Carroll; Drs. G. W. Gaines and E. O. Edgerton of Madison; Drs. D. F. Davis and T. C. Sparks of Tensas Parish. Drs. Paul G. Gamble and A. V. Murry of Greenville, Miss., and Dr. Smith W. Douglas of Eudora, Ark., were guests of the society.

The scientific program consisted of two papers which were presented by the guest speakers. The first presented was that of Dr. A. V. Murry entitled "Fungus Diseases of the Skin." This paper was discussed by Drs. Butler, D. F. Davis, Gamble, Abernathy, Gaines, Edgerton and Sparks. Dr. Paul Gamble read a paper on "Pruritus Ani", which was discussed by Drs. Edgerton, Hopkins, Murry, Sparks and J. P. Davis.

The next meeting of the Tri-Parish Medical Society will be held at Tallulah on August third.

William H. Hamley, M. D., Sec.

JEFFERSON DAVIS PARISH MEDICAL SOCIETY

The Jefferson Davis Parish Medical Society was entertained at dinner by Dr. G. T. Fletcher of Elton for their regular Wednesday evening meeting. A delicious meal was prepared for the guests and the group was entertained during the dinner hour with music and dancing.

Those present were Drs. T. H. Watkins and C. C. McKinney, Lake Charles; Drs. C. A. Martin, R. R. Arceneaux and John M. McClure, Welsh; Drs. Morgan Smith, L. E. Shirley, Frank Miller, John M. Whitney and R. S. Kramer, Jennings; Richard Kramer and Dr. E. G. Berchier were guest of the Society.

After dinner, the following scientific program was presented, with Dr. Morgan Smith, President of the Society, presiding:

"Vomiting", a scientific paper, was presented by Dr. T. H. Watkins; "Public Health", another paper, was presented by Dr. John M. Whitney, Parish Health Supervisor.

Dr. C. A. Martin, Councilor of the Seventh District, made a brief report on the activities of the state medical organization.

L. E. Shirley, M. D., Sec.

NEWS ITEMS

There is an excellent opening in one of the largest cities in Louisiana for a man interested in internal medicine. For information concerning this, communicate with the editor.

Dr. John Signorelli, Professor of Pediatrics at the Louisiana State University Center, addressed the Issaquena-Sharkey-Warren Counties Medical Society on Tuesday, July thirteenth, at the Mississippi State Charity Hospital, Vicksburg. For his subject, Dr. Signorelli chose "Childhood Tuberculosis."

Medical Interne Martin A. Ruoma has been relieved from duty at the U. S. Marine Hospital, New Orleans on June twenty-eighth and directed to proceed to Springfield, Missouri, for assignment to duty at the U. S. Hospital for Defective Delinquents.

AMERICAN PUBLIC HEALTH ASSOCIATION

"Everyone in professional public health owes himself at least one interval in the year when he closes his desk, leaves his books and magazines to gather dust, and takes himself off to the place where everything of importance in public health will be discussed and where everybody of importance in public health will be on hand to take part in the discussions" reads an announcement from the American Public Health Association.

"That place is the Annual Meeting of the American Public Health Association and this year the point in time and the spot in space which will witness the assembly of the nation's health authorities are October 5-8, and New York City.

"The way progress and speakers are selected for the hundred-odd scientific meetings held in the four days assures only the best from the best. For a brief period, the earnest seeker after public health information needs only to keep his eyes and ears open to sense in their proper perspective what is being done and thought in the whole movement."

The opening General Session with Dr. Parran, Mayor LaGuardia, Governor Lehman and Dr. Farland on the platform promises to be an especially colorful affair, as does the Annual Banquet with Dr. McCormack, President-elect, the after-dinner speaker.

There will be special sessions on Mental Hygiene, the Hygiene of Housing, and on Public Health Advancing. Among the subjects chosen for joint sessions are Nutritional Problems, with the Child Hygiene and Food and Nutrition Sections; Water-Borne Diseases, with the Public Health Engineering and Epidemiology Sections; the Crippled Child, with the Child Hygiene and Public Health Nursing Sections and Syphilis in Industry, with the In-

dustrial Hygiene and Public Health Nursing Sections.

There will be an intensive three-day Institute on Public Health Education before the Annual Meeting begins, sponsored by the Health Education Section and under the direction of Professor Ira V. Hiscock of Yale University.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories of Group B. applicants by the American Board of Obstetrics and Gynecology will be held in various cities in the United States and Canada on Saturday, November 6, 1937.

The next general examination for all candidates (Group A and B) will be held in San Francisco, Cal., on June 13 and 14, 1938, immediately prior to the American Medical Association meeting.

Application blanks and booklets of information may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburg (6), Pennsylvania. Applications for these examinations must be filed in the Secretary's office not later than sixty days prior to the scheduled dates of examination.

INTERNATIONAL LEPROSY CONFERENCE

Arrangements are being made to hold the fourth International Leprosy Conference in Cairo, beginning on March 21, 1938. This conference is being organized by the International Leprosy Association, and this will be the first International Conference to be arranged by this association since its inauguration in 1931. Three previous conferences of this nature have been held—at Berlin in 1897, at Bergen in 1909 and at Strassbourg in 1923.

The Egyptian Government is inviting all countries concerned to send official delegates. In addition to these, doctors and others interested in the subject are invited to be present. Full information can be obtained from the Secretary of the International Leprosy Association, 131 Baker Street, London, W. 1.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending June 12, there were 150 deaths reported in the city of New Orleans, of which 94 were due to deaths in the white and 5 in the negro population. There were 9 deaths among babies. For the succeeding week, ending June 19, only 129 deaths were reported, 73 in the white and 56 in the negro population. There were 11 deaths in children under one year of age. Twelve more deaths than the previous week were reported for the week ending June 26, when 141 were listed, divided 85 white and 56 negro. Fifteen of these were in infants. For the following week,

ending July 3, 153 people died in the city, of whom 96 were white and 57 negro. Sixteen of these deaths were attributed to infants under one year of age. For the week ending July 10, 147 of the population of New Orleans terminated their life; of these, 98 were white and 49 negro. Eighteen were infants under one year of age.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the week ending June 19, syphilis led all other reported diseases with 134 cases listed during this week. This ubiquitous infection was followed by the following diseases, which were reported here in more than 10 instances: sixty cases of pneumonia, 56 of gonorrhea, 44 of pulmonary tuberculosis, 23 each of cancer and malaria, 18 of typhoid fever and whooping cough, 16 of diphtheria and 10 of measles. Seven of the typhoid fever cases originated in Catahoula Parish and three in Morehouse. There seems to have been a mild epidemic of cerebrospinal meningitis this week, with four cases discovered in Vermilion Parish. It is to be noticed, also, that one case of encephalitis lethargica was reported in Claiborne Parish and one case of poliomyelitis in St. Helena. For the week ending June 26, pneumonia took first place with 77 cases reported, an unusually large number for this time of the year. This was followed by 46 cases of syphilis, 45 of malaria, 36 of cancer, 33 of pulmonary tuberculosis, 32 of gonorrhea, 31 of whooping cough, 26 each of influenza and hookworm, and 10 of pellagra. Of the rare diseases, a case of poliomyelitis was reported from Orleans and one from St. Martin Parish. Two cases of undulant fever were listed, one each from Caddo and Terrebonne Parish. For the following week, ending July 3, pneumonia still was in incidence about twice the five year average for the twenty-sixth week of the year, 68 cases being sent to the office of the State Board of Health. This was followed by 35 cases of syphilis, 32 of pulmonary tuberculosis, 27 each of malaria and cancer, 24 of gonorrhea, 19 of typhoid fever, 14 of whooping cough and 13 of influenza. The typhoid fever cases were scattered pretty well throughout the state, not more than two coming from any one parish, except Union where five cases were reported. Particularly disturbing are the 7 cases of poliomyelitis reported; four from East Feliciana Parish and one each from Lincoln, St. Landry and Union. In the weekly report, Dr. O'Hara requests that all physicians be on the lookout for cases of poliomyelitis and that they please report promptly all positive and all suspicious cases. The incidence of pneumonia increased to 94 cases for the week ending July 19. Malaria also showed a sharp increase with 59 cases

listed, followed by 43 of influenza. Pulmonary tuberculosis with 41 cases, and cancer with 31, were both about at the average figure. Other diseases in double figures included 25 cases of gonorrhea, 21 of typhoid fever, 20 of syphilis and 18 of whooping cough. This week typhoid fever cases to the number of 7 came from West Carroll. Orleans Parish reported 4 cases, but they were imported. This week there was again a large number of cases of poliomyelitis, almost entirely from the southern section of the state. These parishes each reported one case: Catahoula, East Carroll, East Feliciana, Franklin, Madison, Orleans, Saint Tammany and West Carroll. The case reported from Orleans was imported.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

STATE AUXILIARY PROJECTS

1937-38

I feel sure the Auxiliary members will all be interested in knowing about the projects of the State Auxiliary for 1937-38.

Our State President, Mrs. George D. Feldner, has outlined a splendid program, which has been endorsed by the Advisory Council of the Louisiana State Medical Society.

With the cooperation of each Auxiliary member it is bound to be very successful. The following is an outline of the program:

1. Organization of new auxiliaries.
2. Health education through the public relations chairman.
 - a. Anti-tuberculosis campaign—Xmas seals.
 - b. Fight cancer with knowledge by assisting the Women's Field Army of the American Society for the Control of Cancer, by having lectures, meetings, exhibits, radio broadcasts.

- Invite the laity to join with you (especially P. T. A. Groups and other women's organizations.)
- c. Periodic health examination of the entire family and servants as well.
 - d. Summer round-up of school children.
3. Establish classes in parliamentary law and "Home Hygiene and Care of the Sick" in conjunction with your local Red Cross Chapter. These classes are open to Auxiliary members and members of other selected women's organizations in your locality.
 4. Safe driving campaign.
 5. Hygeia—(essays, contests, health plays for prizes).
 6. Indigent Physicians' Fund.

7. Doctor's Day.
8. Collection of used clothing and medical samples for distribution to various institutions and indigent families.
9. Continue your local philanthropic activities.
10. Read your State Medical Journal, A. M. A. news letter and listen to the A. M. A. Radio Health Broadcasts.

NOTICE TO PRESS CHAIRMAN, PARISH AUXILIARY

How about sending me some news for next month's Journal? Remember, I need your help.

Mrs. Lucian W. Alexander,
Chairman, Press and Publicity.

BOOK REVIEWS

Our Children in a Changing World: By Erwin Wexberg, M. D. and Henry E. Fritsch. New York, The Macmillan Company, 1937. pp. 232. Price, \$2.00.

"Our Children in a Changing World" is an outline of practical guidance for parents and teachers. It is divided into three sections,—general problems, special problems and education.

The sum and substance of the book is that education of the right kind added to a fairly stable heredity will produce a child able to cope with the world and find happiness for himself.

Of course, the book shows the essential fault to lie with the parents and they must realize that it is not a world of changing children but changing ideas and environment on the parents' part.

SUZANNE SCHAEFER, M. D.

Heart Disease: By Paul Dudley White, M. D. New York, Macmillan Co., 1937. 2d ed. pp. 744, 125 illus. Price, \$7.50.

The second edition of this truly magnificent work has been somewhat shortened and considerably reduced in size. This makes, of course, for greater convenience in handling. The abridgement is made possible by reduction of Part I beginning with methods of examination and a very considerably reduced bibliography. In this latter, only the most important references are given. Parts II, III and IV of the book are unchanged. Two new appendices have been added, the one giving, chronologically, the story of the development of the knowledge of heart disorders and circulatory disturbances, and the last one giving the classification of the American Heart Association of cardiac disease. The illustrations have been changed to a very large extent.

Of all the books on diseases of the heart with which I am familiar, I know of no one which

more adequately fulfills its function than does this one. An admirable index to the tremendous amount of material in the volume makes it possible to obtain immediately information sought for. This information has been obtained by the author through years of intensive study so that he has become one of the recognized world authorities on heart disease.

J. H. MUSSEY, M. D.

Cancer and Diet: By Frederick L. Hoffman, L. L. D. Baltimore, Williams and Wilkins Co., 1937. pp. 767. Price, \$5.00.

This book, written in a most excellent and comprehensive style, is of great scientific, as well as historical interest, the writer discussing at length the various dietary theories of cancer from the earliest times to the present day. It is especially commended to those who are interested in diets as a whole, to the surgeon and particularly to the medical men who from recent knowledge have come to learn of the tremendous value of foods in relation to this, as well as other diseases. The information is very carefully assembled and the charts and diagrams are planned with care.

HAROLD A. BLOOM, M. D.

The Social Component in Medical Care: By Janet Thornton in collaboration with Marjorie Strauss Knauth, M. D. New York, Columbia University Press, 1937. pp. 411. Price, \$3.00.

This book represents the first comprehensive effort to analyze an unselected group of medical cases with the view of discovering the significance of the social factors involved. In Miss Thornton's own words, the purpose of the study was "to determine what part influences in the patient's social situation and his manner of reacting to them played in the development of ill health, in the de-

feat of curative measures, and in the adjustment to chronic disease". The book is important because not only does it add a concrete body of information to the literature of medical social work but it makes an equally valuable contribution to medical literature.

It is a study of one hundred cases admitted to the Medical West Service of the Presbyterian Hospital of New York City between October 1, 1930 and May 12, 1931. The focus is clearly on the relation of the social factors to the medical problems and because of the thoughtful evaluation of these factors with this in mind, the book has been kept free of irrelevant material. Following a statement of the purpose and method of the study and general information concerning the patients under study, there are two chapters of case demonstrations. Various types of cases are summarized, the development of each case bringing out the integration of the medical and social aspects. Two chapters are devoted to a detailed analysis of adverse social factors associated with individual problems of ill health. The measures undertaken to remedy unfavorable social factors are described in detail. There is a brief chapter of concluding observations. The case histories on which the study was based are given in abstract in Appendix 1. A complete case record is given in Appendix 2.

The book has equal value for the doctor and social worker and should be included in the bibliography of medical and social work students alike. To get the most out of it, one should familiarize oneself with the case material in the demonstrations and appendices since reference to individual cases is made throughout the discussion.

JULIA MAE MAGRUDER.

A Handbook of Ambulant Proctology: By Charles Elton Blanchard, M. D. Youngstown, The Medical Success Press, 1937. pp. 304. Price, \$5.00.

The author of this handbook is the present editor of "The Bulletin of Ambulant Proctology". Since the year 1924, he has contributed several books concerning the technic of proctologic practice by office methods. This handbook is the offspring of these various predecessors.

The material presented in this publication was derived from the author's personal experience during the many years he has been associated with the practice of ambulant or office proctology. He included the floor plan of an ideal proctologic office and mentioned the various instruments which he considered necessary. The technic of an examination is described, including a review of the conditions which are most frequently encountered. There is a chapter concerning colonic therapy and

dietetics. The closing remarks include business hints concerning the practice.

The contents of the handbook deal with the personal views and experiences of its author, therefore, the value of this volume, or any other of such a nature is obvious. There has been no attempt to review the literature. The methods of treatment suggested are most conservative and there is no mention, other than to condemn, any type of surgical procedure concerning the various conditions discussed.

For those who may be interested in this type of office practice, this handbook should prove of interest for it is the most recent publication of its kind.

WARREN H. HEBERT, M. D.

International Clinics, Vol. 1, March, 1937. Philadelphia, Lippincott, 1937. pp. 310.

This volume, as a whole, is not nearly so good as many of its recent predecessors. This does not mean, however, that there are not quite a few excellent articles. Fine presentations on lobar pneumonia, bronchiectasis, spontaneous pneumothorax and a review of recent advances in carbohydrate metabolism call for special mention.

I. L. ROBBINS, M. D.

Medical Clinics of North America, September, 1936. Philadelphia, W. B. Saunders Company.

This is a fairly good volume with a fair endocrine symposium. Quite a large variety of subjects are considered and a few, such as the diagnosis and treatment of pulmonary bleeding and peptic ulcer, are good. It is the St. Louis number.

I. L. ROBBINS, M. D.

The Cure of High Blood Pressure by Respiratory Exercises: By L. G. Tirala, M. D. New York, B. Westerman Co., 1937. pp. 71. Price \$1.25.

The title of this publication will undoubtedly arouse interest. As hypertension is still regarded as a problem that remains to be solved, any new ideas suggesting further evidence which may serve to explain its intricate and insidious nature will be looked upon with considerable skepticism.

The author briefly reviewed the physiology of the circulation and in particular its relationship to respiration. He mentioned that a series of deep respirations served to lower the systolic and diastolic blood pressure. He stated a number of cases in which the systolic pressure in millimeters of mercury was found to decrease from 190-180 to 130 following 15 minutes of deep breathing. He does not include any laboratory data or experimental evidence to support his contention. His conclusions are based on the clinical observations derived from his personal experience. The duration of his period of observation is not clearly

stated nor does he state the length of time the decrease in blood pressure was noted. There are a number of diagrams but no detailed charts to summarize his reports.

In so much as any suggestion concerning the cure of hypertension must be considered, this edition deserves comment. It must be said, however, it is rather difficult to understand the exact interpretation of what the author means by "cure". The evidence advanced hardly supports the original contention of the author.

WARREN H. HEBERT, M. D.

Practical Examination of Personality and Behavior Disorders, Adults and Children: By Kenneth E. Appel, M. D., Ph. D., Sc. D., and Edward A. Strecker, M. D., A. M., Sc. D. New York, The Macmillan Company, 1936. pp. 219. Price \$2.00.

The purpose of this manual is to guide the student in the technic of psychiatric observation and examination. The matter is presented in two parts. The first is introduced by a brief discussion of the modern, dynamic point of view in psychiatry, with a view of helpful attitudes to be adopted in the practice of psychiatry. The main portion presents guides and outlines to be followed in the taking of psychiatric histories, the mental examination of the patient, the necessary information to be obtained in the mental examination, and suggestions for making examination in the non-cooperative and stuporous patients. A section gives the actual questions which have been found most helpful in tactfully eliciting the desired information from the patient himself. Another section of importance is that which gives an outline to be followed in presenting a summary of a psychiatric examination. Three chapters are devoted to the observation of personality types in psychiatry. The second part is devoted to the psychiatric examination of children and is covered by twenty-one chapters. The first chapter gives an outline for obtaining the history and development of the problem or behavior difficulty of a child, and is followed by sections on the outline on the teachers' report on personality, actual interview with the child, guide for recording psychiatric observation in a child, aids to personality study of a child, measurement of intellectual development, parent-child relationships, and methods of approach of such conditions as feeding difficulties, obedience, temper tantrums, jealousy, fears, lying and stealing. A list of psychiatric terminology is found at the end of the book.

While information regarding procedures for psychiatric examination is contained in many of our valuable textbooks on psychiatry and behavior disorders of children, none present the subject in one volume as in this instance. The value of this

book is assured when it is realized that the work is based on the plans and methods that have been found of service by the authors in their extensive experience in the Medical School of the University of Pennsylvania and in the Department of Nervous and Mental Diseases in the Pennsylvania Hospital.

This should be the manual of choice to all students and practitioners when in need of a guide in the difficult task of making a mental examination.

L. L. CAZENAVETTE, M. D.

Operative Surgery: By J. Shelton Horsley, M. D., LL. D., F. A. C. S., and Isaac A. Bigger, M. D. St. Louis, C. V. Mosby Co., 1937. 4th ed. 2v. Price, \$15.00.

The first edition of *Operative Surgery* by Horsley was published in 1921. The book was successful and there followed two subsequent editions, 1924 and 1928. This is the fourth edition and the senior author has associated as co-worker Isaac A. Bigger. In addition there are contributions by C. P. Coleman, J. S. Horsley, Jr., Austin I. Dodson, and Donald M. Faulkner. The subject is description of suitable operations for various surgical lesions. No attempt is made to offer a number of different operative procedures, but the ones which the authors have found satisfactory in their experience or those which seem to be most physiologic. The descriptions of the operations are given in detail and are clear and complete. The illustrations by Helen Lorraine are beautifully done and deserve special comment as being complimentary to the operative descriptions. Especially good are the chapters on Gastrointestinal Surgery by J. Shelton Horsley, Hernia and Thorax by Bigger, Neurosurgery by Coleman, and the splendid presentation of Plastic Surgery by J. Shelton Horsley, Jr. In the section of transfusion, considerable space is given to the description of obsolete methods, including the Kimpton-Brown apparatus and the syringe method of transfusion necessitating the exchange of syringes from donor's to recipient's needle, and the indirect method of transfusion which the authors state has dominated the field in recent years. No mention is made of the very successful and modern direct methods which undoubtedly within a short time will supplant the once popular indirect or citrate method. The authors do not consider gynecologic operations, and perhaps too little space is devoted to operations for traumatic injuries to the skeleton which, in this era of numerous accidents, is an important percentage of surgery. For example, there is no description of a method for internal fixation for fracture of the neck of the femur.

It is a big task to write an *Operative Surgery* so that it adequately conveys to the reader the method of surgically managing a certain lesion. With few insufficiencies, however, the authors have covered

the task splendidly in these two volumes of 1,387 pages. The books are recommended without reserve to surgeons. The authors are to be complimented on a big task so well done.

HOWARD R. MAHORNER, M. D.

Skin Diseases in Children: By George M. MacKee, M. D., and Anthony C. Cipollaro, M. D. New York and London, Paul B. Hoeber, Inc., 1936. pp. 345, 153 illus. Price \$5.00.

The text is so profusely illustrated with good pictures which demonstrate clearly the lesions under discussion that it is a pleasure to read as well as browse through.

The choice of words selected is clear, adequate and to the point so as to make the descriptions of the lesions readily comprehended and the book easy to read.

Multiplicity of treatments and prescriptions are avoided. The choice of a few selective prescriptions and the rationale of treatment outlined is very satisfactory to the reader.

"Skin Diseases in Children" is a book which the pediatricist has long waited for and will find a welcome place in his working library for ready consultation.

MAUDE LOEBER, M. D.

The Ocular Fundus in Diagnosis and Treatment: By Donald T. Atkinson, M. D., F. A. C. S. Philadelphia, Lea & Febiger, 1937. pp. 142, plates 58. Price \$10.00.

There is place for a treatise which teaches the relationship between the human body as a whole and the human eye. "The Ocular Fundus in Diagnosis and Treatment" by Atkinson affords satisfaction in this regard. The student body needs such a book as is presented and the teacher is thankful that such a work is obtainable. To those who call upon their confreres wishing to be taught the use of the ophthalmoscope and the interpretation of the fundus, it is a boon.

One need not have an instructor if he will carefully read this book. The pictures speak. What more could one wish for?

Chapter I is devoted to the ophthalmoscope. The seven other chapters are studies of the fundus pictures. Chapter II is that of the normal eye, while III, IV, V and VI consider each anatomical part in order and then each part is considered in disease.

There are 106 illustrations including 58 colored plates which are original, and the illustrations contain composite drawing inserts in the picture showing fully the anatomy so that there is an easy grasp of the pathology.

The book is moderately priced, and should be at

hand for use of the student body, the general practitioner of medicine and the ophthalmologist.

THEODORE J. DIMITRY, M. D.

A Medical Formulary: By E. Quin Thornton. Philadelphia, Lea & Febiger, 1937. 14th. ed. pp. 363. Price \$2.75.

This pocket sized volume has certain features of real usefulness which have evidently been generally recognized since it is now in its fourteenth edition. In the preface it is stated that one of its purposes is to discourage secret and patented preparations and, since this book presents scores of effective, orthodox prescriptions in a form which is as readily accessible as those in advertising literature, it should, to a considerable degree, accomplish this purpose.

The book is revised to conform with the latest U. S. P. and N. F. Another feature which indicates recent revision is the inclusion of information on the mandelic acid treatment of pyuria. Some, however, might feel that more recent treatments are still not given sufficient emphasis. For instance, in the section on poisons and antidotes, there is no mention of the sulfoxylate treatment of bichloride poisoning, of the use of thiosulphates and nitrites in cyanide poisoning, or of the use of barbiturates as antidotes for strychnine and picrotoxin poisoning. Atabrin and plasmochin are omitted from the drugs listed for malaria treatment and tryparsamide is not included among the drugs useful in syphilis treatment. In the treatment of round-worms, hexylresorcinol is not mentioned and ethylene and cyclopropane are not included among the other general anesthetics discussed.

ROBT. P. WALTON, Ph. D.

Memoranda of Toxicology: By Max Trumper. Philadelphia, P. Blakiston's Son & Co., 1937. 3rd ed. 304 pp. Price \$2.00.

This interesting little volume contains much sound information on the diagnosis and treatment of poisoning by the more common drugs and chemicals. The material is properly up-to-date and includes directions for the practical application of some of the more recently developed antidotes. The newer sources of poisoning such as carbon tetrachloride and other solvents, thallium, dinitrophenol, nickel carbonyl, ergotamine and chemical burns are presented. Special attention is given to the toxicology of bichloride of mercury, ether, alcohol, barbiturates, bromine, strychnine, cyanide, nicotine, salicylates, snake, spider and bee venoms. A large volume developed along the same lines might prove more valuable to some interested in this subject although the present degree of brevity may make it more generally useful to a greater number of individuals.

R. P. WALTON, Ph. D.

Medical Morals and Manners: By H. A. Royster, M. D. Chapel Hill, University of North Carolina Press, 1937. pp. 329. Price \$2.50.

This is a series of essays representing the keen observations of a brilliant surgeon in forty years' practice of surgery. Many of the essays are obviously the product of a man who has observed closely and who has studied carefully, others are of historical interest and still others are semi-scientific.

The book is divided into five sections and in the different parts are incorporated the subjects which are more or less closely linked.

The author's style is delightful. He writes clearly and lucidly and he expresses himself in a most pleasing manner so that one is tempted after starting the book, to read longer than he had originally intended at the time. He speaks as a philosopher and, in his philosophizing, one can often see the trend of thought which lies back of what he has to say. Of the various comments that Dr. Royster makes, I like best those incorporated in the first paragraph of page 8. Of the various essays, the one on the dignity of medicine appealed to me most. It is unfair, however, to pick out sentences, paragraphs or chapters for special commendation. The whole work is so stimulating, so pregnant with right thinking that a different reader might select other passages as the ones most acceptable to him.

J. H. MUSSER, M. D.

Ocular Therapeutics: By Sanford Gifford, Philadelphia, Lea & Febiger, 1937, 2nd. ed. pp. 341. Price \$3.75.

It is a pleasure to review the second edition of this outstanding work. The detailed table of contents makes its large store of useful information very accessible. Some medical authors do not understand that the table of contents is of greater practical value than the alphabetic index. This second edition is almost a third larger than the first. The chapters which have been most enlarged are those on vitamins, hormones and diathermy. The addition of chapters on experimental methods in ocular therapeutics including retinitis pigmentosa and myopia serve a useful purpose, and the author is to be congratulated upon the simple, adequate and unprejudiced presentation of the subject.

Although the fundamentals of personal and ocular hygiene do not come within the technical scope of ocular therapeutics, I believe that the author should consider the advisability of such a section in his next edition. The practical importance of such a section in the light of our present knowledge and the author's ability to express difficult subjects simply would apparently more than justify the effort and space involved.

In conclusion, I congratulate Dr. Gifford on an exceptional volume, and hope soon to see a third edition.

CHAS. A. BAHN, M. D.

A Textbook of Pathology: By W. G. MacCallum. Philadelphia, W. B. Saunders, 1936. pp. 1275, illus. Price, \$10.00.

The sixth edition of MacCallum's well-known Textbook of Pathology has been thoroughly revised and completely reset in order to include the most recent advances reflected in the literature of the last few years. Eleven chapters have been added and the text of other chapters has been shortened so that the total volume of the new edition exceeds the previous one by only 63 pages. The group of Rickettsia diseases and virus infections has been separated from the group of "infections of uncertain nature." The former group is extensively treated in five new chapters with a thorough discussion of our general conception of filtrable viruses (chapter 40). This group also contains most of the diseases previously discussed under the heading of "Exanthematic Diseases." A chapter on Fungus Diseases has been added. The group of diseases caused by disturbances in the internal secretion has been completely revised and the number of chapters dealing with this subject has been doubled. Other new chapters include one on the unknown neuromuscular atrophies, one on the pathology of the teeth and related structures and one on congenital malformations.

The number of illustrations has been increased from 652 to 697 and many old illustrations have been replaced by new ones. The general plan of the book has been retained and its many friends will heartily welcome the new edition which brings to them, in a rejuvenated form, the great work of our foremost teacher in pathology.

EMMERICH VON HAAM, M. D.

A Terminology of Operations of the University of Chicago Clinics: By Hilger Perry Jenkins, M. D. Chicago, University of Chicago Press, 1935. pp. 99. Price \$1.00.

When operative procedures are filed according to the various terms used to designate identical operations, it is difficult and sometimes practically impossible to make compilations for statistical or other studies. This terminology of operations was arranged for the purpose of overcoming this commonly encountered difficulty, and was developed especially because of the need for such a nomenclature in the University of Chicago Clinics. A constant consideration in the preparation of this outline was the selection and arrangement of a terminology which could be used easily as an operative index file in any hospital.

In this nomenclature: 1. Synonymous terms are grouped together, and operations similar in

technic and purpose are included under the same heading.

2. The term selected to head each type of operation is the most correct form in common usage. Whenever possible, an anatomically derived term is used, and terms which most surgeons would be likely to use rather than to reject have been selected. The index is arranged with appropriate references in order to overcome any difficulty which the record librarian might encounter in the event of a surgeon using a recognized or acceptable synonym. Where necessary, such descriptive terms as "excision", "incision", "closure", "drainage", "removal", and "repair" are employed in designating the procedures. The use of surgeon's names for main headings is resorted to only twice, but surgeon's names are given as synonyms or otherwise included where such reference is appropriate.

3. The author adequately provides for the proper filing of operations which may be combined or performed at the same time, as well as for those which are jointly necessary for the therapy of the essential pathology. Arrangements are made to avoid the improper inclusion in statistical studies of an operation when that procedure was merely an adjunct to some other operation. In some instances the first term simply designates the approach to the part operated upon, the more specific or detailed designation of the procedure being given as a subheading.

4. The main operative term heading is, in appropriate instances, subdivided either according to differences in operative technic or according to the indication for procedure. Likewise, certain procedures are combined or subdivided according to the type or extent of the technic employed, as well as in consideration of the condition for which the operation is employed.

The reviewer found that there is apparently inadequate provision made for the filing of several operative procedures. However, in the main, the nomenclature seems quite adequate for the present time.

Every record librarian should be acquainted with this publication, and reference to it by surgeons would do much to correct the present confusion of terms applied in the designation of identical operative procedures. The nomenclature is so arranged that, even without especial cooperation on the part of the surgeons, the record librarian can classify and file operative procedures in such order that they might be readily located or compiled.

AMBROSE STORCK, M. D.

Tissue Immunity: By Reuben L. Kahn, M. S., D. Sc. Baltimore, Charles C. Thomas, 1936. pp. 707, illus. Price, \$7.50.

This interesting book is not a treatise on tissue immunity in the usual sense. Rather, it is a de-

tailed description of the author's studies of local allergic responses in rabbits, and an exposition of his conception of the theoretical and practical significance of the findings. The experiments which form the basis of the work were evidently planned most carefully, and in many of them Kahn used original technic, demonstrating in a simple and dramatic way a number of important phenomena. Most ingenious are the experiments by which the well-known capacity of the sensitized animal to localize antigen was measured. Horse serum sensitized rabbits were given doses of diphtheria (horse serum) antitoxin by different routes, followed by an injection of diphtheria toxin, and the extra amount of the antitoxin required to protect the animals served as a measure of the relative power of different sensitized tissues to anchor, and so make ineffective, this antitoxin. Other studies deal with the causation of necrosis in areas of allergic inflammation.

Unfortunately, the intriguing experimental data are almost buried in the midst of a tediously long and involved theoretical discussion. The approach to the deeper problems of immunology is somewhat naive, and many of the author's conceptions of fundamental immunologic processes will not find general acceptance among immunologists. The most important criticism which may be made of the entire work is that the author, while continually referring to reactions of "tissues" with antigens, fails to make clear in many instances whether the reactions under discussion are due merely to the presence of specific antibody, or to some mysterious "immunologic capability" of the tissue cells themselves. The already confused terminology of this subject is further confused by new interpretations of old terms and by the introduction of new terms of doubtful value. Even so, the book contains much that is stimulating and challenging, the experimental observations deserve study, and doubtless the author will achieve his purpose of encouraging further investigation of the numerous important immunologic problems which he discusses.

KENNETH L. BURDON, M. D.

Preoperative and Postoperative Treatment: By Robert L. Mason, A. B., M. D., F. A. C. S. Philadelphia and London, W. B. Saunders Company, 1937. pp. 495, illus. Price, \$6.00.

The thirty-four chapters which comprise this book were written by Dr. Robert L. Mason, Assistant in Surgery at the Massachusetts General Hospital, aided by eleven collaborators, all from the Massachusetts General or other Boston hospitals. The book is divided into two parts, general, which contains twenty-two chapters, and regional, which contains twelve chapters.

The book is intended, as the author states in his preface, "to present a detailed consideration

of the preparation and aftercare of surgical patients." His next statement, that "it should suggest to the reader that a surgical operation itself is but a part of surgical treatment," reminds one of Lord Moynihan's comment that in the transition of a patient from ill health to sound health the operation itself is only one of the factors concerned. Two other important points are made in the preface; that the comfort of the patient should not be lost sight of in one's interest in the physiologic aspects of treatment, and that teamwork between internist and surgeon not only simplifies their own problems but also serves the best interests of the patient.

With few exceptions the treatment recommended follows orthodox lines. The chapters on the surgical risk and management of patients with heart disease and of patients with hypertension and nephritis are particularly worth reading. Equally good are the chapters on water balance and methods of parenteral administration of fluids, alkalosis and acidosis, and postoperative pulmonary and urinary complications. In part two, which deals with regional surgery, the outstanding chapters are those on biliary surgery, hyperthyroidism, appendicitis and urological conditions.

Far too brief space is devoted to intestinal obstruction; surely this disorder warrants consideration in more than three pages. It is quite true that the careful reader will find all the information which is needed on the subject in the chapters on water balance and alkalosis and acidosis. On the other hand, the average reader is not a careful reader, and it would seem safer to treat this highly fatal condition less cavalierly. Too little space is also devoted to head injuries, which, for some inexplicable reason, are mentioned only in the section devoted to orthopedic surgery, and mentioned incidentally, at that. In a few instances the authors' theories and practice are not in accord with those generally accepted today. It is an error, for instance, to talk of hyperventilation in shock, when the best physiologists today believe hypoventilation is the underlying factor, just as it is an error to consider delayed and secondary shock in burns as if they were individual entities. It is bad practice also to advocate the removal of abdominal drains *in toto* rather than by degrees.

The discussion of hyperthyroid disease is, as I have said, particularly good. At no time, it is pointed out, should the responsibility for the patient be that of the internist or the surgeon alone; both should follow him from his entrance to the hospital until his discharge after operation; for the internist to prepare the patient and turn him over to the surgeon for operation when he is ready for it converts the surgeon into a mere technician. The section on cardiac complications in this chapter, which was written by Dr. Laurence B. Ellis, is unusual in that it divides patients with

thyrotoxicosis complicated by cardiac manifestations into two groups: The first comprises those with underlying organic heart disease who coincidentally develop toxic goiter, and the second includes patients whose cardiac disturbance is chiefly or entirely the result of the hyperthyroidism itself. Later the statement is made that congestive heart failure does not occur in thyrotoxic patients with otherwise normal hearts unless auricular fibrillation is present. These are considerations rarely if ever emphasized. The author does not mention the importance of the liver factor in hyperthyroid disease, which is curious, as he considers it at length in the chapter on biliary surgery.

The author minces no words where frankness is desirable. Thus he says that empyema, which is the commonest of all chest lesions, is also, in proportion to the frequency of its occurrence, the lesion which is most often badly treated or entirely neglected. The risk of infection in hernia is emphasized, and Erdman's statement is quoted that even in mildly infected wounds a recurrence of 30 per cent is to be expected. Prompt operation in acute appendicitis in children is stressed, which is not unusual, but the emphasis on prompt operation in aged persons is distinctly unusual.

The book is well worth careful perusal. It is full of good material, which is presented concisely and in easily readable form. It is well illustrated, and there are several excellent, lucid tables, particularly those on the choice of anesthetic agents, and on the diet after gastric surgery.

FREDERICK FITZHERBERT BOYCE, M. D.

Proceedings of Conference on Venereal Disease Control Work, Washington, D. C., December 28-30, 1936. Washington, U. S. Public Health Service, 1937. pp. 154.

Dr. Parran, Surgeon General U. S. Public Health Service, deserves great commendation for his stand in the drive on "Venereal Disease Control". He should be accorded full cooperation by the medical profession, the press, the lay social organizations, the general public, and last and most essentially The Legislative Bodies (National, State and Municipal).

I am not fully acquainted with the funds available by the Social Security Act, but quoting Dr. Walter Clarke, Director, Bureau of Social Hygiene, New York City in his report before the conference, "a near estimate to the cost of an adequate program, including hospital facilities would be 25c per capita population per annum". Dr. John L. Rice, Health Commissioner, New York City, reported the appropriation of \$270,000 for 1937, by the City of New York independent of other funds available approximating one quarter million dollars through W. P. A. and Social Security.

Thus, it is not difficult to realize that sufficient

funds are absolutely necessary for this program to become inaugurated with competent medical, clerical, and follow-up force as well as equipment and drugs.

The report of Dr. Earle G. Brown, Secretary, Kansas State Board of Health, gives one a fair idea of the difficulty encountered in enforcing such a drive, quoting "during the life of the Chamberlain-Kahn Act, it is believed Kansas had a Venereal Disease Control Program comparable with those in other states, at least of corresponding population."

Independent of legislative measures for funds and compelling the reporting of all active infectious cases, measures should be instituted against the advertising of proprietary and patented drug preparations for the cure of these diseases as well as the sale of and the counter-prescribing by druggists in cases of venereal disease. These infringements should be punishable by fines (sufficiently large) and, if necessary, imprisonment.

MONROE WOLF, M. D.

Cosmetic Dermatology: By Herman Goodman, B. S., M. D. New York, McGraw-Hill Book Co., Inc., 1936. pp. 591. Price, \$6.50.

Herman Goodman's *Cosmetic Dermatology* is divided into two parts: Part one comprises a thorough materia medica of drugs used by the cosmetic manufacturer, cosmetician, and physician-dermatologist; part two deals with conditions and problems for which the cosmetician is usually consulted, in addition to some of the commoner skin ailments.

By all odds the first part of the book is of more importance, representing as it does, our first inexpensive materia medica of cosmetics. In these days when the market is deluged with cosmetic preparations, the physician-dermatologist must combine the patience of Job with the detective ability of Philo Vance to discover the cause of many cases of dermatitis venenata resulting from their use. The dictionary and formulary in this book should be of incalculable value in determining the noxious ingredient or ingredients.

The volume can be consulted profitably by the dermatologist, physician, cosmetologist, pharmacist, and cosmetic manufacturer.

M. MALLOWITZ, M. D.

The Problem Child At Home: By Mary Buell Sayles. New York, The Commonwealth Fund, 1932. pp. 329. Price, \$1.50.

Since most behavior problems of children have their origin in emotional disturbances arising in their homes and are caused by factors that could be eliminated, "The Problem Child at Home" deals with certain phases of the problem in a simple but comprehensive manner. There are three parts

to this book: Part I, The Emotional Satisfaction which Parents and Children Seek in One Another; Part II, Mistaken Ideals Which Influence Parent-Child Relationships; Part III, Narratives or Case Histories of Eight or Ten Selected Records of Behavior Problems From Files of the Child Guidance Clinic.

"The Problem Child at Home," written by Mary Buell Sayles and published under the auspices of the Commonwealth Fund, treats in a very sane way the problems resulting from parent-child relationships, and it should be thoroughly read by parents, teachers, social workers, and physicians.

C. S. HOLBROOK, M. D.

Reading, Writing and Speech Problems in Children: By Samuel Torrey Orton, M. D. New York, W. W. Norton & Company, Inc. pp. 200. Price, \$2.00.

This represents the third presentation in the Thomas W. Salmon Memorial Lectures, and that alone would be sufficient to recommend the book highly. Dr. Samuel Orton, former Professor of Neurology and Neuropathology, Columbia University, has especially studied aphasia as seen in children. The importance of abnormal speech, written or spoken, in the young human can hardly be over-emphasized, and it deserves the attention of educators, physicians, and parents. This book is not so technical or involved that it will prove difficult for the general reader. Dr. Orton has made a definite contribution to the subject.

C. S. HOLBROOK, M. D.

The Physiology and Pharmacology of the Pituitary Body: By H. B. Van Dyke. Chicago, University of Chicago Press, 1936. pp. 577. Price, \$4.50.

To attempt a description and critical evaluation of the scientific foundations of our knowledge of the pituitary body in terms, of physiology, pharmacology and their related sciences is unquestionably a Herculean task. The author has done this most creditably in reviewing and correlating the tremendous amount of experimental work done during the last fifteen years (up to and including part of 1935). The material, necessarily condensed, is well organized. The general plan followed in most of the chapters is to review the results obtained on amphibians, birds and mammals and to include clinical observations only in so far as they appear to contribute to the knowledge of the functions of the pituitary body. The contents include chapters on the embryology and comparative anatomy of the pituitary body, the effects of hypophysectomy, implants and extracts of the various parts, methods of preparation of the active principles and the interrelationships of the pituitary with other glands. A table of scientific and com-

mercial names of hormones and hormone preparations is given as an appendix. About 3000 titles are listed in the bibliography.

H. S. MAYERSON, Ph. D.

Cystoscopy and Urography: By James B. Macalpine, F. R. C. S. Baltimore, William Wood & Company, 1936. illus. pp. 478. Price, \$9.00.

This second edition of cystoscopy includes three new chapters on urography and new chapters dealing with pelvic resorption, excretion urography and pyeloscopy. Other new chapters deal with fistula of the bladder, funnel-neck deformity of the bladder and congenital abnormalities of the kidney and ureter. In addition, many chapters have been revised.

The subject of urology from a cystoscopic and urographic standpoint is covered in a fairly complete and practical manner. The cuts and illustrations are numerous, and the text is easy to comprehend. The volume has no bibliography.

"Cystoscopy and Urography" is particularly helpful to the student and embryonic urologist.

JOHN MENVILLE, M. D.

PUBLICATIONS RECEIVED

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INTRODUCTION OF LEPROSY INTO LOUISIANA, AND THE FIRST LEPER HOSPITALS*

T. J. DIMITRY, M. D.†
NEW ORLEANS

Henry W. Blanc¹, the first dermatologist to the Charity Hospital at New Orleans, (1886-1889) and Isadore Dyer,² who succeeded him and later became Dean of Tulane University, each an authority on leprosy, repeated and committed to print a rumor they had often heard; viz., "that leprosy was introduced into Louisiana by the Acadians." (French people that England had expelled from Nova Scotia and who now make up fully 200,000 of the state's population). By doing so, they have made gossip appear as truth. There was no evidence to confirm these rumors and justify the assertion of these two eminent men, except that at their time a greater number of lepers were, or claimed to be, Acadians, or had lived in the Parishes of Louisiana inhabited by the Acadians. These men did not realize that certain people coming direct from France claimed to be Acadians, and were not those who had gone to Nova Scotia, a hundred and more years before.

Authors of periodicals³, novels⁴, and encyclopedias⁵ repeated what these two men had to say concerning the introduction of leprosy, but without fully analyzing the writings of either. In fact, both Blanc and Dyer prove by their own writings that they did not believe the Acadians brought it, so on the face of it, lack of testimony and evidence, it proves conclusively

that the Acadians were not responsible for its introduction.

The history of the Colony⁶ and the knowledge we have concerning leprosy readily disprove the "on dits."

The first Acadians⁷ arrived in Louisiana in 1758, and seven years later the disease was so prevalent among the people of the City, white and black alike, that it was found necessary to establish a lazaretto. If these Acadian people infected New Orleans, its contagiousness must have been great and not in keeping with the knowledge had on the subject (leprosy, a disease with a long period of incubation and not very contagious). For the Acadians on arrival did not remain in New Orleans, but made their way up the Mississippi to Bayou La Plaque where they established a settlement in the Districts of the Opelousas and Attakapas. The disease was not known to be prevalent among them, nor did they travel through a country where it was known to exist. Although it is true that they had been confined to jails in the different states and some died of smallpox and other infections, and that their children had been bound out, still there was no leprosy in these states for them to acquire and propagate.

Other contingents of Acadians arrived at later dates and in greater numbers, coming by way of San Domingo where leprosy was prevalent, but, long before the arrival of these later contingents, leprosy was known to exist in Louisiana. Moreover, for many years ships had been conveying passengers other than the Acadians from San Domingo.

Eighty years after the Acadians had been dispersed from Nova Scotia by Lawrence, leprosy did make its appearance in the land of their debarkation⁸ and some would lend undue em-

*Read before the Orleans Parish Medical Society, October 12, 1936.

†From the Department of Ophthalmology, Louisiana State University Medical Center.

phasis to this coincidence in order to show that the Acadians had brought leprosy to Louisiana.

Leprosy in Louisiana unquestionably dates to a period earlier than the year 1758. The early history of the Colony contributes other important factors more tangible than that of the Acadians bringing it that should not be ignored by the students who seek to find the origin of this disease in our state.

Negro slaves⁹ from African pestholes had been brought into the state years before the Acadians came to Louisiana, yet forgotten as a factor. The trade carried on with our Spanish neighbors where leprosy was prevalent was, early in the Colony's history, very extensive, but ignored. Bienville, the Governor of Louisiana, had this to say in his communication to the King of France as regards his soldiers: "beg the King to discontinue shipments of chronic and incurable individuals." Some of these may have been lepers, and further it is well known that the notorious John Law carried on a lucrative business, shipping some undesirables of Europe to our Colony, and definitely, some were lepers. Either is a far more satisfactory explanation for leprosy introduction, than that of the Acadians.

Romains, in his "History of East and West Florida" says "that the chronic disease of the negro was leprosy." Negro slaves began to arrive in Louisiana in 1717, forty years before the Acadians. They came from the Congo, Angola and Guinea, and a hundred or more years before had infected, it is believed, not proved however, the West Indian Islands and both Central and South America.

That the negro contributed to its introduction into Louisiana is unquestioned; in Cartagena, in New Granada, 200 years before he was thought to be the factor in developing a pesthole. Yet 700,000 negroes coming from the same places in Africa to Jamaica, all within a few years, did not produce any unusual number of lepers on that island; and how are we to explain the fact that leprosy was not conveyed into the other states of the Union where the negro traffic was carried on in equal proportion to that of Louisiana.

The health officers may have been more ex-

acting in these other Colonies. In Louisiana we know they were neglectful.

In early French Colonial days, the health¹¹ officers of Louisiana were permitted to purchase sick slaves, administer medical care and sell them as soon as health was restored. The remedies were most effective. Even the sick slaves were valuable, and lack of conscience would permit him to pass on such individuals whom he might otherwise consider incurable.

The sick slaves that had been brought to the other states and refused entrance by the health officers may have been landed on the Lafourche, Terrebonne and Islands of Louisiana, just as the bootlegger of today in his traffic, finds on the coastline an opportunity for



Father Boglioli, the Father Damien of Louisiana

ready disposal; all this is much easier than to return them to their place of debarkation. These two factors, the neglect of the health officers and smuggling, may have accounted for infection in particular sections, but in New Orleans and other sections, the white man suffered with the affliction in equal if not greater proportion than the negro. Why should this be?

During the Medieval period of history,

leprosy exacted an enormous toll on the Continent of Europe. It may not have been leprosy but some other type of disease; however, most chronic, requiring some nineteen thousand¹² lazarettos to be established throughout that country. France alone had two thousand.

At the close of the seventeenth century, the disease had practically disappeared from the Continent, remaining however in a few localities. Its disappearance from Europe was followed by a widespread distribution in the new Colonies and on the Islands of Oceanica. Is this simply a coincidence? Today the leper absconds and insists on right for freedom. Were colonial period days different from our days?

To the south of us the disease was known in very early times. Diaz narrates that Cortez opened a hospital for sick soldiers less than fifty years after the discovery of America, many of whom were lepers; this before negroes had been brought to Hispanola. Even at that time, he says, they had already infected the American Indian with leprosy.

Although this paper treats of the introduction of the disease into Louisiana and not into those countries south of us, yet I am willing to infer that Europe sent or permitted her lepers to immigrate without restriction to her new possessions. Spain permitted them to go to the countries south of us, and France to Louisiana. Students making study in research will find the topic timely. What England did with hers can uncover a most interesting document.

Gayarre, in his "History of Louisiana" says "when reading the despatches of the governors of Louisiana for a series of fifty-four years, one is tempted to believe that the French government selected from the convicts in the King's Jail, the men sent as soldiers to Louisiana." Bienville, the Governor of the Colony, complains of having under his command these specimens of humanity.

Even Dr. Blanc who would have the Acadians introducing leprosy into Louisiana has this to say as late as 1886: "a number of immigrants have brought from Western Europe developed or undeveloped forms of leprosy in-

herited from parents suffering from the same disease." Doctor Dyer is of the opinion "that the evidence seems to point to the fact that the disease came rather through the West Indies." Unfortunately both emphasized too greatly the Acadian story.

Leprosy had not been eradicated from Europe in the early days of colonization, and when the notorious John Law collected his cargo of outlaws and undesirables, he included the leper. The female criminal branded with the fleur-de-lys, and bound with chains to the brigands of Saint Germaine, was forced to immigrate to the new colonies. It is not unreasonable to assert that he shipped the leper. Some of those that came may have laid claim to be Acadians. They spoke French. The history of the Colony should reveal that some were from houses of nobility.

I feel that I have corrected the error of Dyer and Blanc and have established the source of its introduction. Dyer was without doubt the leper's champion, a noble man fighting for them. He would not have done



Dr. Isadore Dyer, the Champion of the Nation's Lepers.

anyone an injustice. He was mistaken in this incident. Your attention is called to Dyer's works as regards the leper and our neglect to recognize what he has done.

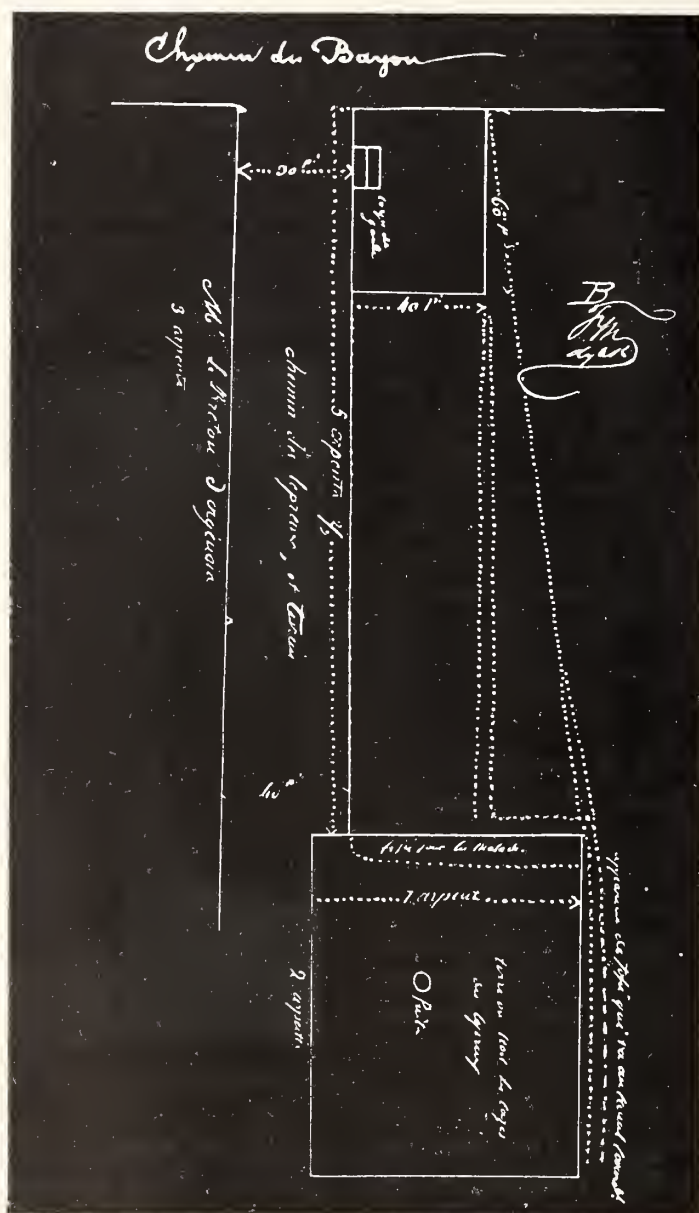
LAZAR HOUSES IN LOUISIANA

Ulloa, the first of the Spanish governors of Louisiana, on arrival at New Orleans in 1776, commented upon what he thought to be a strange situation, the prevalence of leprosy in the city of the new Colony at a time when there were so few cases seen on the streets in Europe. He infers that he had seen many cases at an earlier period.

Without delay he immediately established a lazaretto for these unfortunates. It was located at the Balize, a settlement of a thousand people down the river, a distance of about eighty miles. In having done this, he met with criticism, for some of the afflicted had lived

in the Colony for years, and even held positions of importance. In the face of this opposition, Ulloa remained firm.

Isolation had accomplished so much in banishing leprosy from the old world, that he felt convinced that it was a necessity in this new Colony. It was a mistake however to establish the San Lazaro at such a great distance from the city. He probably reasoned that the Balize was the jumping off point for the traffic coming from the West Indies, Mexico, and South America, and that it constituted the most suitable place for quarantine. During that year forty vessels came from San Domingo. Some time later a hurricane destroyed the laza-



Map of the Leper Land (1785).

retto, but history has recorded his endeavors which offers ample proof that leprosy was most prevalent on his arrival.

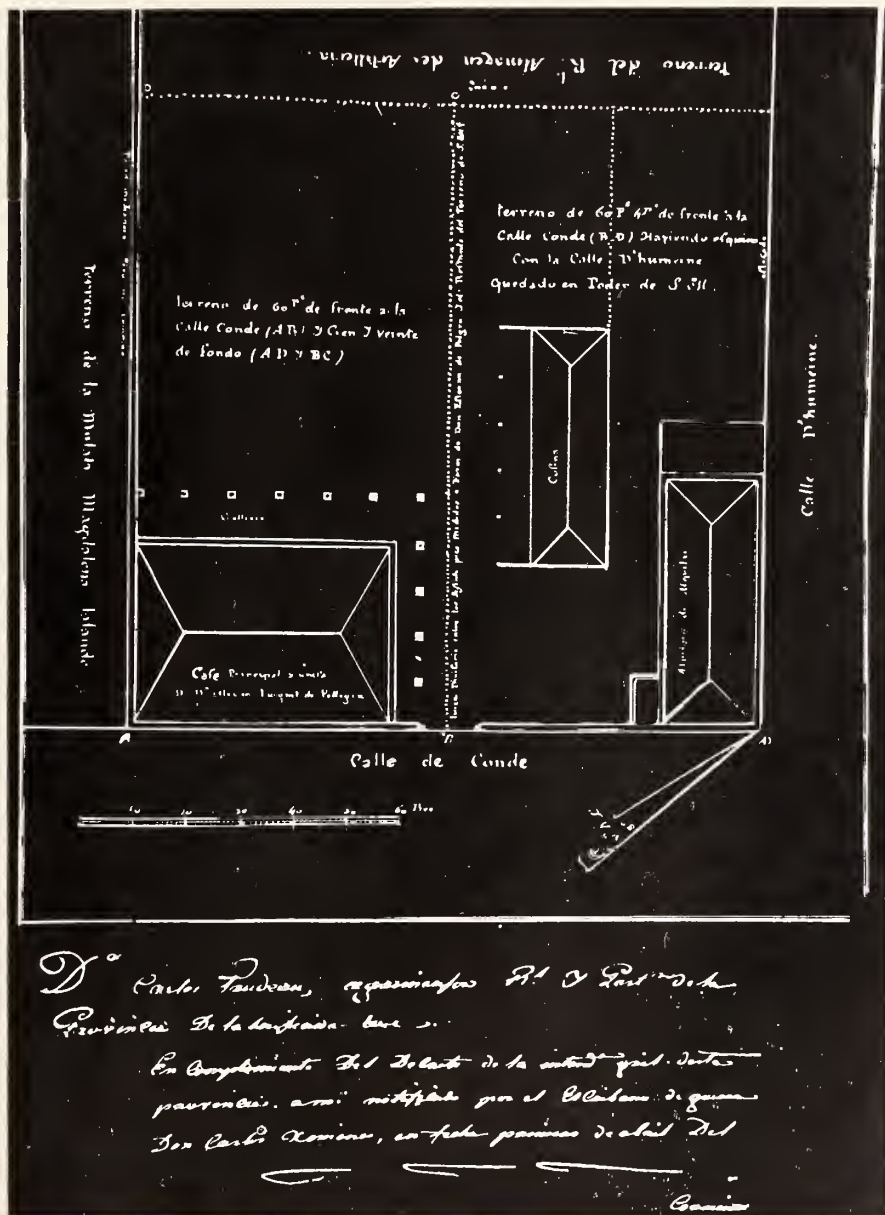
For twenty years after the hurricane these people roamed the streets and became dispersed throughout the city and country.

Miro, the second Spanish Governor, in 1758 established them on a section of land skirting the city. This was made possible by the beneficence of Almonaster y Roxas.

Most Illustrious Lordship:

I, Don Andres Almonaster y Roxas, wishing to serve Your Lordship, with due respect state: that I have built a Hospital for lepers with four wards capable of lodging the same num-

ber of white families; also, I have built another separate Hospital with the same number of wards for colored people, all at my own expense; said Hospitals having been built at the extreme end of one of my farms which is located near this City, adjoining on one side, the lands belonging to Josef Custidas and on the other the Canal made for the bathing of the patients, which Canal will serve as a boundary line to said Hospitals, which I graciously dedicate to Your Lordship so that the lepers, who at the present time are very numerous in this City, may be lodged in said Hospitals, and the public may permanently enjoy this benefit, for which purpose, I formally donate in perpetuity



said buildings, renouncing all rights that I have and may have on said buildings and the land which I have donated and is located within the aforesaid boundaries.

New Orleans, April 20, 1785.

(Signed) Andres Almonaster y Roxas.

No. 101

April 20, 1785

Donation made in perpetuity, by Don Andres Almonaster y Roxas, to the City, of the ground-plot of the Hospital for the lepers, and all buildings which he had had constructed thereon.

SPANISH DOMINATION (1770-1792)
(CABILDO RECORDS)

The institution proper must have housed fully thirty-two lepers. Besides, there were thatched covered shacks scattered about the land. The bathing ditch that gave the boundary of the land emptied into the Bayou St. John.

Some would have it that shortly after this was established, the disease disappeared for a period of eighty years, only again to appear at the time of the foundation of the pesthouse on Hagan Avenue and Gravier Street. The following document shows that these parties were mistaken:

Let it be known that I, Don Estevan Fuignet de Pellegrue, resident and Senior Physician of the Royal Hospital of this City, do declare that His Majesty (God grant him long life) by virtue of a Royal order, dated at St. Ildephonso, Spain, on the fourth of August, 1798, addressed to this Intendancy, granting me a permanent donation of a city lot, 70 ft. frontage and 120 ft. depth, cornering with Conde, and Dumaine Streets, bordering on Dumaine Street with a lot occupied and owned by the Royal Treasury, (The Royal Artillery Arsenal) fronting on the river levee next to the property of the succession of Don Espiritu Listau.

The mentioned property does also border on the Conde Street side, with the property of the free mulatto woman, Magdalene LaLande, as it is evident by the plan enclosed herewith, which was made by the Royal surveyor, Don Carlos Trudeau and should be archived in the office of the Intendancy.

I had a two story brick house erected at my expense on the adjoining lot, to the one His Majesty donated me, to erect in the entire land a hospital for leper patients.

To which testimony we the undersigned, do hereby attest our signatures in the City of New Orleans, April 12, 1799.

(Signed) Juan Bautista Blache

(Signed) Don Carlos Gallard.

(Signed) Juan Ventura Morales

(Signed) Don Miguel de Riseda

(Signed) Don Estevan Fuignet de Pellegrue.

Before me,

Carlos Ximenez,

Notary Public.

Louisiana State Museum—File No. 40, Box No. 86. Year 1799.

DATA ABOUT "SAN LAZARO HOSPITAL" (LEPERS' HOSPITAL) AS FOUND ON BOOK No. 4087 OF THE ARCHIVES OF THE LOUISIANA STATE MUSEUM, NEW ORLEANS.*

Don Juan de Castanedo, City Treasurer and administrator of the funds of this Hospital, rendered accounts, covering the year 1799. This account showed a balance on hand of 149 pesos, 3 reals on the 31st of December of 1799. The revenues for 1799 consisted of said balance, 5 per cent interest received on money loaned to Dona Magdalena Cartier (890) pesos, 4½ reals, principal) covered by mortgages on their houses and from proceeds of an alms box established for that purpose.

This Hospital had a Guard Corps under a Corporal named Christoval Rodriguez, who also was in charge of disbursing (money supplied in small amounts by Don Juan de Castanedo) the money needed for food and the necessities to keep the five interned lepers (during 1799). The five lepers were a white man, Jose Francisco Jorge, who was interned during the entire year, negress Clara, interned since March 29, negro Jacobo since April 30, mulatto Jose McCarty since July 7 and negress Catalina since July 8, 1799.

The following has been acquired without

*From pages 194 to 201 of original book.

From pages 163 to 169 of translated book.

much effort showing that leprosy had continued:

New Orleans Medical and Surgical Journal 1:234, 1844-45.

Table showing the number of admissions, discharges and deaths at the different hospitals of New Orleans during the months of August and September, 1844.

The U. S. Marine Hospital reported one death from leprosy from May, 1843 to April, 1844, p. 390.

MORTALITY OF NEW ORLEANS

Statement of deaths in New Orleans for the half year commencing July 1, and ending December 31, 1844, with a list of the diseases and accidents from which they occurred. Furnished by the sextons of the different cemeteries to the Board of Health:

1 death from leprosy.

In 1858, Joseph Jones, President of the Louisiana Board of Health, reported a case of leprosy on the Lower Lafourche.

CONCLUSION

Leprosy had an early beginning in Louisiana, starting many years before the coming of the Acadians. The Scotchman, John Law is responsible for having introduced leprosy into Louisiana.

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- "It is a matter of no small interest to compare Charlevoix's report on New Orleans in 1722 with that of Father Louis Vivier's written in 1750, as recorded in the Jesuit Relations, Vol. 69, page 201: "New Orleans, the Metropolis of Louisiana, is built on the east bank of the river. It is of medium size and the streets are in straight lines; some of the houses are built of bricks and others

of wood. It is inhabited by French, negroes, and some savages. All these together do not, it seemed to me, number more than twelve hundred persons . . ."

"In former years when eight or ten ships entered the Mississippi, that was considered a great number; this year (1750) over forty entered, mostly from Martinique and San Domingo."

11. Miller's Survey, N. M. The Commerce of Louisiana, Vol. 21, p. 234.

"On the arrival of the slave ship, the Health Inspector was the only person permitted to go aboard. He separated the sick from the well . . . the sick were sold at auction . . . there were some persons who made a business of buying them. These doctors who bought them were careful to put their curative secrets in practice only for themselves. Slavery brought such excellent returns that merchants, financiers and even doctors entered into the traffic."

12. Works of Mezeray, Virchow, and Simpson. The latter in Edin. Medical and Surgical Journal, (1841-42).

13. Franz, in his "Colonization of the Mississippi" (Leipzig, 1906) writes: "The company even kept a whole regiment of archers, who cleaned Paris of its rabble and adventurers, and received for this a fixed salary of 100 livres a head, and even honest people were not safe from them."

And again says: "Prisoners were set free in Paris in September, 1719, under the condition that they would marry the lowest type of women and immigrate. They were chained and dragged to the port of embarkation. In 1720, such action was prohibited; however, it did not prevent the shipping of a third lot of lewd women in 1721. The first came in 1719, the second in 1720."

DISCUSSION

Dr. A. E. Fossier: I note that the Doctor has found the same difficulty encountered by historians, that is, finding the truth. This can be done only by research and, even then, the real truth is hard to find because almost all of history is hearsay, and events have been repeated time and time again until they become an established fact. It is the duty of the student of history not to take these statements for granted, but to try to establish their authenticity. This Dr. Dimitry is striving to do.

I am not altogether ready to accept the statement that John Law brought the lepers into Louisiana for I am inclined to think that leprosy was introduced by the negro slaves from the West Coast of Africa, and also by the trading vessels from the Gulf ports.

I fully agree with Dr. Dimitry that the Acadians should not be accused of having introduced leprosy into Louisiana. Only unauthentic evidence has blamed them for something they are not responsible for. It is probable that they were the victims of this disease and that they had acquired it here in Louisiana. Conditions in the city at that time were such as to be disposed to the transmission of leprosy. Sanitation was at a low ebb, and because of the slave traffic and the financial losses resulting from sickness of these unfortunates, it may be possible many were admitted with the disease. Besides, the health officers did not have the refinements of diagnosis we have today.

This is a splendid paper and more theses of this character should be presented to the Society.

Dr. Rudolph Matas: Everyone delving in the medical history of Louisiana will appreciate Dr. Dimitry's paper as a valuable and interesting contribution to the discussion of a very pertinent and mooted question.

Why has leprosy stamped its exotic pathology more conspicuously upon Louisiana than upon any other state? Not only upon its pathology, but upon its laws and its literature as well?

Without trespassing too much upon Dr. Dimitry's argument, I do not feel that we can hold John Law and his Mississippi Bubble as responsible for the introduction of the disease early in the 18th century through the numerous immigrants from Germany and Western Europe who had been lured to Louisiana by the glitter of his fantastic speculations. Nor, should we blame, as has been done, the exiled Acadians who came later (1764-5) from Acadia (Nova Scotia) to find a refuge in our southern parishes. Rather should we attribute the origin of leprosy in Louisiana to the slave traffic which, beginning in 1719, had crowded the colony under Bienville in 1732 with over 2,000 slaves who brought with them, all the pathology including leprosy, that characterized the negro populations of West Africa.

Later still, it is evident that though the first record of a home for lepers is attached to the abortive administration of the first Spanish governor, Ulloa (1765), leprosy prevailed in the Colony long before that time.

It would seem almost certain that leprosy was constantly fed in the late colonial and post-colonial period by the close and intimate relations with the French colonies of San Domingo, Haiti, Martinique, and with Cuba and the Spanish West Indies, where leprosy had been indigenous long before its appearance in Louisiana. It would seem from this that leprosy came to Louisiana from multiple sources and that the earliest of these was through the West African slave trade.

Dr. Dimitry's paper apart from its historical merit has suggested many recollections of my student days, when as an interne at the Charity Hospital in 1879, I was in charge of a leper ward. There were about 15 lepers who had been segregated in that ward for lack of any other place to put them. Father Boglioli was the hospital chaplain for the catholic patients at that time, a very benevolent Italian priest who had virtually consecrated his life to his ecclesiastic duties. I still remember him visiting the sick and administering the last sacrament and otherwise living in the hospital and in the community without the least social restrictions. I was so interested in the patients in that ward, that I had seriously considered writing my graduation thesis on my hospital observa-

tions, and particularly the case of Father Boglioli, himself, who was the only person known to have contracted the disease in the long history of the Hospital. Long before his retirement his features gradually assumed the leonine and most characteristic facies of the disease. I have always thought of him as the Father Damien of Louisiana.

Distinctly do I remember also, that on Common Street (now Tulane Ave.) there was a fruit stand midway between the hospital and the Medical School (later the site of the Tulane Theatres). The eldest son of the Italian fruit vendor developed leprosy and remained at the stand for years selling oranges, bananas, and other fruit to the students, long before the disease was recognized and yet no one seemed to have contracted the disease. These, and other facts that came under my observation at the time, impressed me deeply with the very rare and exceptional contagiousness of the disease and the extraordinary natural immunity enjoyed by the great mass of the population despite the most intimate contact with the typically infected individuals in the most favorable conditions for its inoculation (tropical heat and mosquitoes). The relative rarity of leprosy in Louisiana at the present time and in the countries where it prevailed epidemically in the middle ages, and, later, when leprosariums for the afflicted dotted the land everywhere, suggests that quite apart from segregation and sanitation, the wide diffusion of the disease and its filtration through the social strata of the many varieties of mankind in the course of its millennial existence, has led to a gradual immunization by hereditary dilution of the modern world.

Dr. Dimitry (In conclusion): I wish to thank both Doctor Matas and Doctor Fossier for their discussion. I was fearful that the chair would rule against a discussion of historical contributions. These gentlemen have helped me call attention to an error of the historian, viz, that of the Acadians bringing leprosy to Louisiana.

Neither would agree with me on how it was brought, but we do agree that Blanc and Dyer were wrong when they repeated that the Acadians brought it. If the negro was responsible, then why did he select to infect only the Louisiana Colony? Negroes from the same source went in greater numbers to the other Colonies.

Dr. Matas reminisces on Father Boglioli, the Father Damien of Louisiana, and calls attention to the story of "Tombleau Blanc" a romance of Louisiana in which a leper is the hero. I have recently published an article in the Year Book of Hotel Dieu on "The Early Nursing of the Leper" and in the article I make comments on Father Boglioli.

This present contribution was written, hoping to lead to a third contribution, one in which the

Leper's Champion is to be narrated. The great character is Dr. Isadore Dyer. He worked at all times for the interest of the leper, yet only a few years have passed and he is forgotten. The Lazzaretto at Carville is truly his monument.

Doctor Dyer was a remarkable man and at all times willing to work in behalf of these unfortunates. Had he lived they would be receiving the care of the nation's learned ones. The scientists would be gathered in consultation. As it is now they are isolated in a quasi military camp and receiving but a modicum of the nation's help.

DELAYED OPERATION FOR ACUTE HEMATOGENOUS OSTEOMYELITIS*

HOWARD R. MAHORNER, M. D.†
NEW ORLEANS

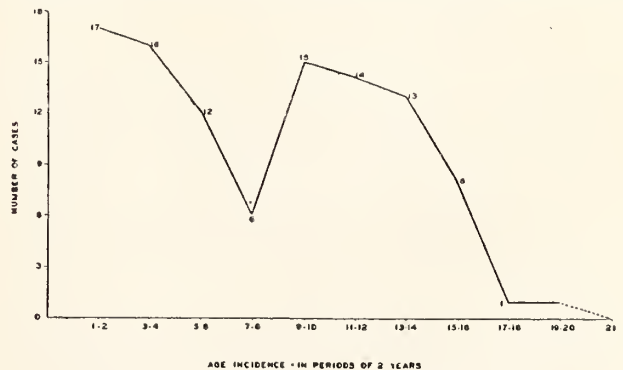
Though for decades scientific medicine and surgery have been in the front line of advancement of the human race, the profession is still not above Galenizing a procedure to such an extent that to question its supremacy may invite a storm of criticism. In such position today is the problem of management of acute hematogenous osteomyelitis. For decades, with the assurance of supreme accomplishment, students have been taught the doctrine of urgency in this disease, based upon the traditional axiom already modified for certain other conditions, "Where there is pus it must be evacuated," interpreted as indicating immediacy and in this disease at times anticipation. Recently, however, such strong and such peculiar evidence has been accumulating^{1, 11} that one begins to listen more attentively to such fanciful ideas, questioning whether or not, as soon as the diagnosis is made, operation is imperative in this condition.

The material upon which this study is based is 112 cases of acute hematogenous osteomyelitis admitted to Charity Hospital of Louisiana from 1930 to 1936 inclusive. During that same period there were 390,735 admissions, an instance of one case in 3,490 patients (0.03 per cent). This by no means includes all the cases

of osteomyelitis, for excluded from the study were all cases in which operation had been done previous to admission, cases in which the disease was in a chronic stage, osteomyelitis by contiguity or by extension from an adjacent focus, as for example an infected tooth or sinuses, or osteomyelitis from compound fracture. Excluding osteomyelitis from compound fractures, there were 1,787 cases of osteomyelitis, acute and chronic, in this same period. Thus, this study includes only the small percentage of cases which were admitted in the acute stage of the disease and which had not previously been operated upon, cases in which the lesion definitely originated by metastasis through the blood stream.

AGE, SEX, RACE

Of the 112 cases, the youngest patient was six months of age, the oldest fifty-nine years. The greatest number of cases for any single year was in the fourteenth (11); and in the fourth (10 cases). In the first five years, there were 37 cases (33 per cent); in the second five years of life, 29 cases (25.9 per cent); from eleven to fifteen years inclusive, 33 cases (29.5 per cent); from sixteen to twenty years of age inclusive, 4 cases (3.6 per cent), and twenty-one years of age and over, 9 cases (8



ACUTE HEMATOGENOUS OSTEOMYELITIS

Chart 1. Graphic representation of age distribution of cases of acute hematogenous osteomyelitis. The disease is one of growing years and after the sixteenth year is not common.

per cent). Acute hematogenous osteomyelitis is obviously a disease of growing years, and occurs most commonly during the period when bone growth is most active.

As is usual in such studies, the disease was found more commonly in males. There were

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

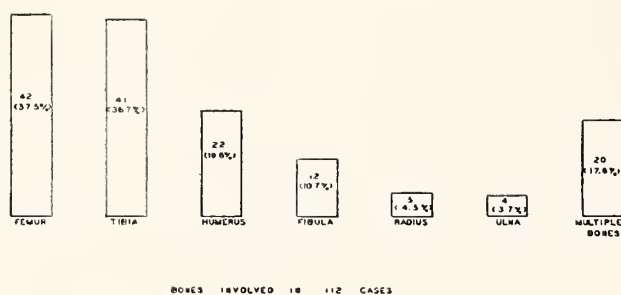
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80 males (71.4 per cent) and 32 females (28.6 per cent).

Negroes apparently are not as susceptible to the disease as whites. There were 85 white patients (75.8 per cent) and 27 negroes (24.2 per cent); whereas white patients accounted for 58.5 per cent and negro patients 41.5 per cent of the admission in this same seven year period.

BONES INVOLVED

Acute hematogenous osteomyelitis notably attacks the long bones, generally in the region of the metaphysis. In this series of cases single bones were involved in 92 instances (82.2 per cent), and two or more bones were involved in 20 cases (17.8 per cent) (Chart II). In



ACUTE HEMATOGENOUS OSTEOMYELITIS

Chart 2. Graphic representation of relative frequency of different bones involved in acute hematogenous osteomyelitis. The femur and tibia are involved in a majority of cases. Multiple bones are involved in 17.8 per cent.

18 of the cases in which metastatic lesions occurred, two bones were involved and in two cases, three bones were involved. The right side was as commonly involved as the left (femur, 22 right, 20 left; tibia, 21 right, 20 left; humerus, 11 right, 11 left). The femur was involved in 42 cases (37.5 per cent) and the tibia was involved in 41 cases (36.7 per cent). The humerus was next most commonly affected, 22 cases (19.6 per cent). The fibula was involved in 12 cases (10.7 per cent), the radius in five cases (4.5 per cent). The frequency with which other bones were affected were: ulna, four cases; vertebra, one; calcaneus, one; rib, one; sternum, one; scapula, one, and astragalus, one.

SYMPTOMATOLOGY

It is not the purpose of this paper to consider in detail symptomatology and diagnosis of acute hematogenous osteomyelitis. In mak-

ing this study, however, attention was paid to the symptomatology, which will be discussed briefly. The more dominant clinical characteristics are pain and fever. The pain, most commonly in the region of the joint, is frequently misleading, but, objectively, the point of maximum tenderness found on the diaphyseal side of the epiphyseal line with the possibility of hematogenous osteomyelitis kept in mind will usually indicate the correct diagnosis. There is frequently a history of recent dermal or oropharyngeal infection, and often a history of recent trauma (occurring from six days to eight weeks previously in this series) at the site of bone involvement. In 53.5 per cent of the cases the admission temperature was 103° F. or over. Other symptoms are nausea and vomiting, rarely convulsions, high sustained temperature, rapid pulse, delirium, severe toxemia, leukocytosis. In 33 per cent of cases, leukocytosis was 15,000 or above. The highest leukocytosis in this group was 45,000 cells per cubic millimeter. There is a relative and actual increase in the neutrophils. Locally, tenderness is an early finding. Swelling and redness of the part may appear twenty-four to forty-eight hours after onset. Brought to its simple analysis, in the acute stage, acute hematogenous osteomyelitis presents two pictures: one, that of a severe septicemia or bacteremia, and the other that of a local infection in the bone. There are no methods of precision in the diagnosis of hematogenous acute osteomyelitis in the early stages.

ROENTGEN RAY EXAMINATION

The roentgen ray is of no value in the early diagnosis of acute hematogenous osteomyelitis. In this study it was frequently found negative seven and eight days after the onset; was occasionally negative as long as two weeks after the onset; was positive in one instance, if the history is correct, on the second day, and one instance on the fourth day of the disease. It is rarely positive before the eighth to the tenth day. The earliest appearance in the roentgenogram of the disease is usually an elevation of the periosteum, which generally becomes evident about the eighth day. Very soon after this osteoporosis is noted, generally about the eleventh to the fourteenth day. Osteoporosis may be the first roentgenologic sign of the disease if the process is deep in the bone. Osteoporosis, a mot-

tled decalcification of the bone, while not pathognomonic of acute hematogenous osteomyelitis, is with the clinical appearance definite evidence of the disease. Sequestration or the third roentgen ray stage of the disease was not found on the eighteenth and twenty-third days of the disease, never definitely present until the fourth week. The presence of sequestrum in the roentgen ray is manifested by an area of density surrounded by an area of osteoporosis. (Fig. 1.) The sequestrum, the radio-opacity of

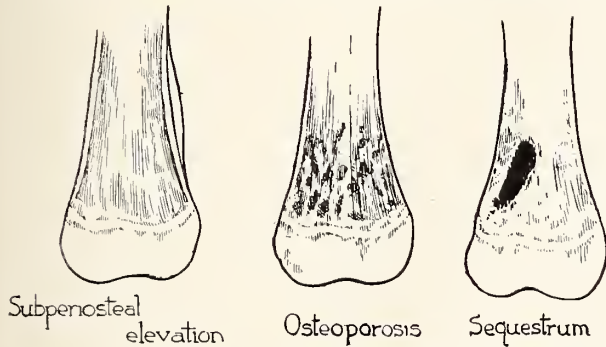


Fig. 1. Three x-ray stages of acute hematogenous osteomyelitis. The earliest roentgenologic evidence of the disease is elevation of the periosteum which may be present about the seventh day. The second x-ray stage, or osteoporosis, may be present about the eleventh day. A sequestrum definitely demarcated from the living bone is not discernible until the fourth week.

which approaches that of normal bone, is a fragment of bone from which the blood supply has been cut off entirely. The osteoporotic area surrounding is evidence of inflammatory involvement. The roentgen ray, though of no value in the early stages, is of great value in the third roentgenologic stage of the disease or in the stage of sequestration to determine the extent of bone destruction and the amount of new bone formation.

PATHOGENESIS

The pathogenesis of hematogenous acute osteomyelitis as far as the local lesion is concerned is still a debatable question. Trauma, slight or moderate, is too frequently an historical fact to be disregarded as playing a part. Even slight trauma undoubtedly makes a place of lowered resistance. It was recorded as a predisposing cause in 26 per cent of these cases. Fine, subperiosteal, incomplete fractures of the cortex may occur, with slight local hemorrhages, a nidus for the growth of metastasizing organisms. The usual explanation of the pathogenesis of acute hematogenous osteomyelitis

is that organisms lodge in the end-arteries of the metaphysis, that the process spreads rapidly up and down the marrow cavity and by traversing the Haversian canals becomes subperiosteal. This undoubtedly occurs in some instances, but it undoubtedly also occurs that the focus may begin in the arteries of the Haversian canal or in the subperiosteal vessels, and then the progress of the pathology may be reversed. In a number of instances (21 out of 88 operations) in the present series, pus was found at operation in the soft tissues or under the periosteum, but not in the medullary cavity though the bone was opened. Though not conclusive, this is evidence supporting the theory that osteomyelitis may begin in the subperiosteal region. Apparently the initial focus in the bone may be in one of three sites (Fig. 2): The organism may lodge in the end-

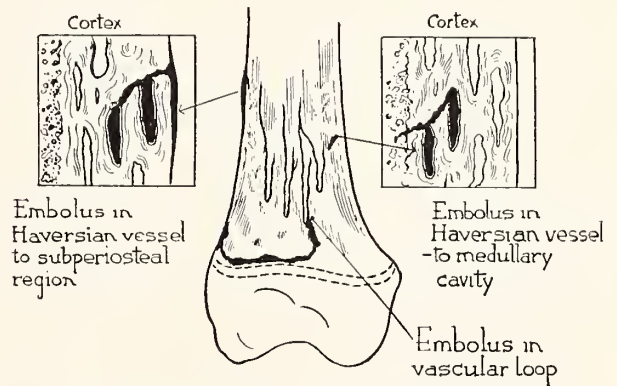


Fig. 2. Diagrammatic representation of three locations in the bone at which a focus of osteomyelitis may originate. (1) From an embolus in the terminal arteries of the vascular loops of the metaphysis, the process may progress through the metaphysis along the epithelial plate to the subperiosteal region. (2) The process may begin in the Haversian canals and rupture under the periosteum or into the medullary cavities. (3) It may begin directly under the periosteum.

arteries of the metaphysis and spread from there through the marrow cavity to the surface through the Haversian canal; secondly, the primary embolus may be in the cortex itself in vessels of the Haversian canals, spread thence to the subperiosteal region or to the medullary cavity, or it may begin in the periosteal vessels, form a primary abscess subperiosteally and spread through the Haversian canals, involving the cortex, and then to the medullary cavity. Though this primary process is still debatable, unquestionably thrombosis of the vessels occurs, resulting in ischemia with ultimate necrosis of irregular areas of the

bone. The process of regeneration and repair goes hand-in-hand to a certain extent with that of destruction, the periosteum being raised, new bone is formed thereunder. When cortical destruction has taken place, the granulation tissue which fills the necrotic area after removal of the sequestrum slowly or never becomes osseous again.

BACTERIOLOGY

Usually the *Staphylococcus aureus* is accredited with being the most common cause of acute hematogenous osteomyelitis. In this series, blood cultures were taken from 41 cases. Twenty were positive, 21 were negative. There were 10 deaths in the patients with positive blood cultures, or 50 per cent. There was one death in the patients with negative blood cultures, or 4.8 per cent. *Staphylococcus albus* was the causative organism, according to the blood cultures, in 11 cases, *Staphylococcus aureus* in four. In one case there were both *Staphylococcus albus* and *aureus*, and in three cases *staphylococcus* type not stated. In one case a non-hemolytic streptococcus was the cause. Of the 10 deaths in the positive blood culture, *Staphylococcus albus* was present in six blood cultures, *aureus* in two, *staphylococcus* type not stated in one, and the streptococcus in one.

Blood cultures are very important, not only from the standpoint of prognosis, but also of therapy. When positive blood cultures are obtained, the prognosis is much more grave. Repeated blood cultures with increasing numbers of colonies generally indicate that emboli are being liberated from a focus, generally in the bone. A positive blood culture does not always indicate that the organisms are coming from the secondary lesion in the bone. They may be gaining access from the primary lesion on the skin or in the nasopharynx or may be actively multiplying in the blood stream. It is reasonable to suppose that in most cases when there is more than one bone involved the second bone becomes involved by virtue of emboli liberated from the focus in the first bone and not from the primary focus on the skin or in the pharynx. However, in rare instances undoubtedly the second bone involvement is a metastatic lesion from the primary lesion from which the first bone was involved.

Cultures were taken from the bone in 76 cases. In 63 (82.9 per cent), the culture was positive. In 17.1 per cent it was negative. In 32 cases (42.1 per cent) of those cases in which cultures were taken from the bone, the *Staphylococcus albus* was isolated. In 21 cases (27.6 per cent), *Staphylococcus aureus* was isolated; in five cases, (6.6 per cent), a *staphylococcus*, type not stated, was isolated. Thus, the *staphylococcus* was present in 76.3 per cent of cases from which cultures were taken from the bone. Four (5.3 per cent) had mixed infections, and in four cases (5.3 per cent), a streptococcus was isolated from the bone, in two instances of which it was non-hemolytic, one hemolytic, and one *Streptococcus viridans*.

MORTALITY

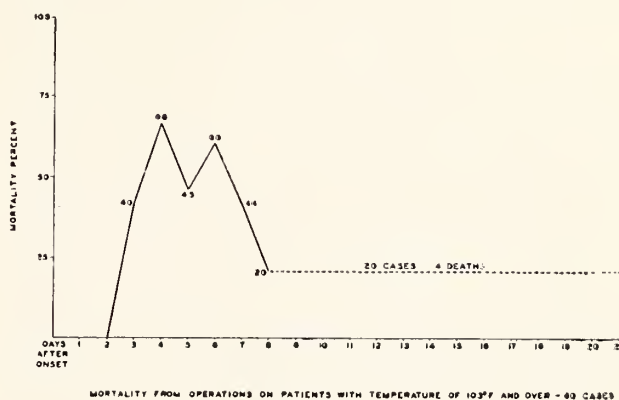
A detailed study of the mortality in these 112 cases is exceedingly interesting and instructive. Four of the patients were not operated upon at all. One of these was aspirated, the others received no operative treatment whatsoever. They all recovered, one deserting the second day after admission. Amputation was done in an additional case under the mistaken diagnosis of Ewing's sarcoma. Thus, there are 107 cases in which operation was done. Twenty-seven (25.2 per cent) died. This unusually high mortality may be due to the fact that any case about which there was doubt of its being a true case of acute hematogenous osteomyelitis of the metastatic variety and not in the chronic form on admission was excluded from the study. Five patients were operated upon on the first or second day of the disease with no death; 57 patients were operated upon on the third to the seventh day of the disease, inclusive, with 20 deaths (35 per cent). Fifteen patients were operated upon on the eighth, ninth, and tenth days of the disease with two deaths (13.3 per cent). After the eleventh day of the disease, 30 patients were operated upon with four deaths (13.3 per cent). Thus, it is seen that as far as operation is concerned from the standpoint of duration of the disease the mortality is higher, 35 per cent, from the fourth to the seventh day. It is lowest in this series in the first forty-eight hours of the disease, and is next lowest after the seventh day. This has its signi-

ficance, because regardless of whether it may be proved to be proper to operate upon patients within the first forty-eight hours there will always be cases which are not properly diagnosed and admitted to the hospital within the first forty-eight hours of the disease. Similar in some respects to recent studies on acute appendicitis, the operative mortality from the third to the seventh day is found to be the highest of all periods. This is so not only collectively in the periods, but the daily average is higher. The indications would seem that a case seen within this period should be given supportive treatment and operation delayed, from the standpoint of mortality alone, until a later date.

More interesting and more significant is the study of the mortality according to the day patients were operated upon after admission to the hospital. Fifty-seven patients were operated upon the same day they were admitted to the hospital, and of these 16 (28 per cent) died. Twenty-two patients were operated upon the day after they were admitted and of these nine (41 per cent) died. Seventy-nine patients were operated upon the first forty-eight hours in the hospital, and of these 35 (31.7 per cent) died. Of 29 operated upon the third day or after, one,* or 3.45 per cent, died. No deaths occurred when patients were operated upon four or more days after admission to the hospital.

The objection immediately presents itself that the very sick patients were operated upon on the first or second day they were in the hospital and that those with less severe forms of the disease were permitted to wait. In order to forestall such conclusions, another selected group of the patients was studied. Only those patients with temperature 103° F. or above on admission were included in this group. There were 60 cases that fell into this category, of which 22, or 36.6 per cent, died. Obviously these patients were the sickest of the entire series. They were all very toxic, with definite acute signs of acute hematogenous osteomyelitis. Of this group, three patients were operated upon within the

first forty-eight hours of the disease. Those three patients recovered. Thirty-seven patients were operated upon from the third to the seventh day of the disease, inclusive. Of this group, 18 or 48.6 per cent died. Twenty patients were operated upon after the eighth day of the disease, and of this group four, or 20 per cent, died. It would seem from this study that the most dangerous time again to operate upon a patient with acute hematogenous osteomyelitis is between the third and seventh day inclusive. (Chart III). However, when



ACUTE HEMATOGENOUS OSTEOMYELITIS

Chart 3. Graphic representation of mortality from operation on different days of the disease in cases with temperature 103° F. and over on admission to hospital. The mortality, zero in five cases on the first and second days of the disease, rises rapidly on the third and fourth to a maximum of 66 per cent, gradually subsides to 20 per cent average after the seventh day of the disease.

these cases are studied from another angle, the mortality is more surprisingly elucidated. Thirty-five of the patients were operated upon the day of admission. Fourteen of these, or 40 per cent, died. Two of these deaths occurred when the operation was done on the twenty-first day of the disease, but on the first day of admission; one death occurred when operation was performed on the fourteenth day of the disease and on the first day of admission. These patients, of course, were severely ill when they were operated upon, even though they had had the disease for some time. Thirteen patients were operated upon the second day they were in the hospital with seven deaths, or 54 per cent mortality. Thus, 48 patients were operated upon on the first or second day they were in the hospital, with 21 deaths, or 43 per cent mortality. On the third day in the hospital, three patients were

*This death occurred from operation on the third day the patient was in the hospital.

operated upon with one death, or 33 per cent mortality, and after the third day, nine patients were operated upon with no deaths or zero mortality. These nine patients were clinically as sick on admission as those operated upon on the first day they were in the hospital.

The discrepancy between the time the patient was operated upon after admission to the hospital, compared to the time the patient was operated upon after the onset of the disease, is marked. In this study it was found that no matter how long the patient had the disease, even up to three weeks, if he was severely sick and was operated upon during the first two days he was in the hospital, the mortality was extremely high, almost one in two. The reason for this seems obvious. These patients are admitted from their homes, with high temperature, severe sepsis, and frequently after much nausea and vomiting with dehydration. Operation in this stage of the disease, instead of being a boon, is an additional burden which 43 per cent of patients cannot survive. All the patients that were operated upon after the third day of admission were as sick on admission as were those who were operated upon on the first day of admission. The mortality for the former group is zero, and the mortality for the later group is almost 50 per cent. The indications are absolute: When a sick patient is admitted to the hospital, the first thing that should be done is not operation, but administration of supportive measures; fluids, transfusions, general support of the patient to overcome the sepsis or generalized infection from which he is suffering.

TREATMENT

Such astounding results analyzed in detail as these must make us question the dictum that the treatment of osteomyelitis is immediate operation when the diagnosis is made. Osteomyelitis is fundamentally septicemia or bacteremia, and the primary treatment should be directed against this condition. Immediate attention should be paid to the general condition of the patient. He should have adequate fluid intake and measures should be taken to combat the generalized sepsis or bacteremia. The affected extremity should be supported for relative immobility. Repeated small transfusions of 200

to 300 c.c. daily are of value. Chemotherapy is of no value in the staphylococcic variety of the disease, but promises to help in the form of prontosil or prontosil when a streptococcus is the invading organism. Repeated blood cultures not only indicate the type of therapy to be directed against the general condition, but they are also of value in the prognosis, as has been indicated by the more serious mortality rate in those cases in which the blood cultures were found to be positive. Moreover, a subsiding number of colonies in the culture indicates a good prognosis, whereas an increasing or continuous number of colonies in the blood culture indicates that the thrombi and emboli are continuously being liberated from some focus of infection.

The question of when to operate for acute hematogenous osteomyelitis is still debatable. However, evidence is fast accumulating that to open the bone, regardless of time, simply because the diagnosis has been made is a grievous error. I have not been able to find previous studies in the literature showing mortality figures from operations on the different days of the disease. From this study it would seem, as far as mortality is concerned, that operation within the first forty-eight hours offers an excellent chance of recovery. However, from this study it is unquestionable that to operate upon the patient between the third and seventh day of the disease is inviting a mortality rate of one in every three cases. After the tenth to the fourteenth day, the mortality appreciably subsides, and operation can be performed without entailing such a high risk. More striking and more indicative is the fact that patients who are operated upon immediately upon admission to the hospital will have a mortality of one in three, regardless of the day of the disease, provided it is not within the first forty-eight hours of the disease. Patients who have supportive treatment for three or more days in the hospital and then are operated upon have little risk, the mortality approaching zero. Certain patients with osteomyelitis, if they were treated conservatively without operative measures, would die. There is no question about this. What this mortality rate is, is debatable. One author² gives 12 per cent. The statement has been made that the

delay of operation permits the disease to progress and destroy the bone, and that operation will prevent this destruction. Operation does not only not prevent it, but from a physiologic standpoint it would be hard to hit the disease center, that is, the lumen of a vessel in which there is an infected thrombus by drilling the bone in an early case. It is not the perivascular abscess which accounts for the progression of disease so much as it is the thrombus in the vessel which by propagation and by emboli cuts off the blood supply to the bone and results in sequestra. Not all cases which are left alone will result in elevation of the periosteum and destruction of the whole shaft. I show a picture of a severely sick patient who was treated conservatively by virtue of the fact that he was inaccurately diagnosed, elsewhere. His temperature was 104° , he was delirious, he was severely ill, and he had sequestration in the lower end of the femur, and yet the disease was limited there. Numerous instances of this sort could be found were we more inclined to delay and not accept the theory as an actual proved fact that delay results in more destruction of bone.

OPERATIVE PROCEDURE

In studying the operative procedures in these cases, simple incision for abscess was done in seven cases. There was one death, or 14.3 per cent mortality. Drilling of the bone was done in 43 cases, with 16 deaths, or 37.2 per cent mortality, and saucerization or curettage was done in eight cases, with three deaths, a mortality of 37.5 per cent. This includes only the patients who were severely ill, with fever 103° F. or above. Subperiosteal resection was done in one case with a resultant fatality. There is some question as to whether a patient should not be operated upon within the first forty-eight hours of the disease and the bone drilled. Future experience and evidence may settle this controversial point. Certainly from the third to the seventh day of the disease severely ill patients should not be operated upon. Furthermore, when a sick patient is admitted to the hospital with high fever, he should not be operated upon immediately, but the general support of the patient should be instituted; blood transfusion, infusion, and studies of the blood count and blood cultures should be made.

Then one should wait until the acute condition has subsided. Sequestration may have occurred, but it is not roentgenologically nor pathologically distinct until the fourth week of the disease. If an abscess forms, the abscess should be incised, but there is usually no immediate necessity for going into the bone. In the third stage of the disease roentgenologically, when a sequestrum has definitely formed, I feel that to decrease morbidity and to relieve the aches and pains that these patients have continuously, a sequestrectomy should be done, removing only as much bone as is necessary to find the sequestrum and to remove it by gently lifting it out or picking it out of its nidus. Curettage in this instance is dangerous, because it opens vessels and destroys the reactionary fibrous wall which surrounds the sequestrum. Occasionally, what percentage we are not certain, a sequestrum can be absorbed. When the acute process has subsided, the abscess surrounding the sequestered area may become bacteriologically sterile. In this instance if the sequestrum has any connection with viable bone, it is possible for revascularization to occur as in bone grafts, and thus dead bone may again be converted into living bone. This phenomenon is probably rare, but that it does occur is a consideration. When there is a strong reactive connective tissue wall surrounding the sequestered area and the sequestrum is completely cut off from its blood supply, there is no chance of revascularization. Removal of this sequestrum will relieve the aching pain which these patients have.

CONCLUSIONS

One hundred and twelve cases of acute hematogenous osteomyelitis occurring in Charity Hospital in New Orleans were studied. The general mortality was 25.8 per cent. The mortality was highest from the third to the seventh day of the disease inclusive, (35 per cent), and was highest when the patient was operated upon the first or second day after admission to the hospital, regardless of the length of time he had had the disease. To operate upon a patient with acute hematogenous osteomyelitis as soon as the diagnosis is made in every instance is an erroneous teaching, and invites in some instances a terrifically high mortality. Conservative treatment should be practiced, at

least between the third and seventh day of the disease and for two or three days after admission to the hospital. Operative mortality is lower outside of these periods. In the acute stage of the disease, abscesses should be drained by simple incision only, because of higher mortality from procedures involving opening the bone. When the general condition is improving, and the acute stage is mitigated, the patient should be treated conservatively until definite sequestration is detectable roentgenologically. Removal of the sequestrum at this period reduces morbidity.

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DISCUSSION

Dr. James Q. Graves (Monroe): Leveuf, in 1936, discussed the advantages of delayed operations in acute osteomyelitis caused by *Staphylococcus aureus* and *albus*, while Edward T. Crossan in the *Annals of Surgery* of the same year discussed the conservative treatment of acute hematogenous osteomyelitis. From their studies they are of the opinion that the delayed operation is preferable to the immediate operation. Crossan classifies them as follows:

The immediate operation—done in the first 24 to 72 hours.

The immediate early operation—in three to 12 days.

The immediate late operation—after the second week.

Quoting statistics gathered by him of 121 cases, show that in immediate operation the mortality was 26 per cent, as compared to 15 per cent in the delayed operation. Within the first three or four days, the mortality was 39 per cent. If operated

within the first week, the mortality would be 35 per cent. At the end of the second week, the mortality drops again to 15 per cent.

There are two essential questions to be discussed in Dr. Mahorner's paper: first, in the opinion arrived at in the light of present day knowledge as to when is the best time to operate: early, immediately, or late. His studies compare favorably with Crossan and Leveuf in that Dr. Mahorner's statistics show that within the first 48 hours the mortality is lowest, and that between the third and tenth days the mortality again drops. Unfortunately, the diagnosis can seldom be made during the first 48 hours. In many cases, therefore, the advantage of an operation is not possible. During the first 48 hours the patient is less toxic, and the temperature is lower. The operation might resolve itself into a simple incision and drainage. Between the third and tenth days, the temperature reaches its highest point, ranging from 103° to 105°, the patient is more toxic, the tissues are dehydrated, and the resistance is lower. After the tenth or twelfth days, some immunity has been established, the localized abscess is walled off in certain cases; surgery is then most favorably instituted, with the best results, if not operated on within the first 72 hours.

The second question of importance is whether or not to open the medulla. Again, the work of others compares favorably with that of Dr. Mahorner in that the mortality is lowered by not opening the medulla, unless there are existing convincing evidences favoring such a radical procedure.

Blood cultures should be made for diagnostic purposes, as well as prognostic. Not always is the culture positive; when negative, the prognosis is better.

Crossan reports 171 cases of hematogenous osteomyelitis that were operated on, and in only 12 cases was pus found in the bone; pus in the bone and beneath the periosteum in 24 cases; and pus beneath the periosteum in 42 cases; and pus beneath the periosteum only, confirmed by decompression, in 39 cases. Eighty-one of this number were found to have periosteal pus with only 36 cases involving the bone and periosteum, thus showing a higher percentage of periosteal abscesses alone than with the periosteal abscess and bone involvement.

It is best not to operate on these cases early or late if they are dehydrated and highly toxic until they are given the proper preoperative treatment, consisting of repeated small blood transfusions, with sufficient fluids intravenously to maintain the normal water balance in the tissue, and general preoperative care. Again, it is best, if subperiosteal pus is found, to evacuate and drain, and not to disturb the bone if the patient's

condition is serious. Later, if there is bone involvement, formation of sequestrum will take place, which, I agree with Dr. Mahorner, should be left alone until a second operation can be done for the removal of this sequestrum.

If we are dealing with a streptococcus type, prontosil intramuscularly and by mouth has proved, in many instances, almost a specific. Prontylin is also being used in blood stream infection.

Dr. John T. O'Ferrall (New Orleans): I do not think it is quite fair to let Dr. Mahorner's paper go by without adding my thanks to him for the illuminating statistics given. I think it does emphasize the fact that so many of the men in general practice who see early osteomyelitis, for those are the men, who usually see it, depend entirely on roentgen ray for diagnosis. The roentgen ray shows nothing, therefore, they think nothing should be done. I believe if a very careful study of these cases of osteomyelitis in the long bones was made in the initial stage, operation, as suggested by Dr. Mahorner would be safe in most cases. After the patient has become toxic and very sick, he certainly should not be operated upon until the proper time as outlined by Dr. Mahorner.

Dr. Guy Caldwell (Shreveport): I think we all appreciate the very excellent preparation of this paper and the splendid analysis that has been given. The results that Dr. Mahorner has reported are very similar to those tabulated in several reports from other parts of the country. Dr. Graves mentioned one or two and the report that John Wilson, of Los Angeles, made a year or so ago gives percentages very close to those of Dr. Mahorner.

Dr. Mahorner brought out two or three additional points well worth stressing, particularly the one with reference to treating the patient for a day or two after he enters the hospital and before submitting him to operation. Since I gave a paper before this Section on this same subject some twelve years ago, our conception of the disease and its pathologic changes has altered and, as a result, we have gradually grown more conservative. At that time, I was doing an immediate operation on nearly every case that came into the hospital. I recall distinctly, however, that there have been three patients operated upon within the first forty-eight hours of their disease who died promptly.

Patients with osteomyelitis, as a rule, reach us late in the first or early in the second week, and usually we wait for a day or two until their condition is better before operating, and since we have done so our results are unquestionably better. We have gradually grown more conservative. To have the results of a series of cases carefully studied and reviewed as Dr. Mahorner has presented them gives us a reason for becoming more con-

servative, and it is very important that we should.

Dr. C. O. Wolff (Haynesville): From the paper just given us, it was shown that the operative mortality rate in the first 24 hours is practically nil. In my own experience, which is limited of course, all the cases that I have seen operated on very early, in the first 24 hours, are the ones that have no residual trouble, that get well without being crippled and without further operations. I believe that it should be stressed that if these cases were diagnosed very early by the practitioner, that better results would be obtained by early operation. Everybody agrees that between the third and tenth days when the patient is very sick, waiting is better.

I think this should be stressed and not leave the impression that it is not important to diagnose acute osteomyelitis early.

Dr. Mahorner (In conclusion): There is one point that Dr. Caldwell and Dr. Wolff mentioned which I think is still in a state of indecision. From clinical studies there seems to be no question that there is a danger period for surgery in this disease. Results in this particular series indicate, as Dr. Wolff pointed out, that the mortality is lower in the first forty-eight hours. However, I was glad to hear Dr. Caldwell make the point that he had had cases operated upon within the first forty-eight hours with resultant death. Deaths do occur when operation is performed in the first forty-eight hours of the disease, but the actual mortality for operation in that period has not been accurately determined. There are too few cases to be sure what the mortality in that period is. The question as to whether cases should be operated upon if the diagnosis is made within forty-eight hours after the onset is still, as far as I am concerned, an undecided point. It may be that with further studies, as detailed as this, grouping cases into days of the disease on which they were operated upon, we will find that like appendicitis, there is an optimum time, within the first forty-eight hours, and when that has passed delayed treatment is best. That is still unsettled and it remains for many studies to prove that point.

Recently, I was still further convinced of the value of delayed operation for acute hematogenous osteomyelitis. I saw a case on the first day of the disease, a child running high fever, having pain in the leg, tenderness over the lower end of the tibia, and every indication of the disease except roentgenologic. The roentgen ray is of no value at this stage. So convinced am I of the value of conservative treatment I decided not to operate but to wait. In the period of a week symptoms subsided. The process never went on to suppuration and the child remained well. Was this a true osteomyelitis or a periostitis? I do not know, but I do know that if I had been convinced

that the thing to do was to operate immediately for osteomyelitis, I would have operated. And should I have gone ahead and drilled the bone I would have introduced the infection into the medullary cavity and would most certainly have had a prolonged course of hematogenous osteomyelitis.

It is only more studies of the disease that will give us this point as to whether we should operate within the first forty-eight hours. At the present time, I know operation should not be done when the patient is acutely ill between the third and seventh days of the disease.

PARATYPHOID AND RELATED BACTERIA IN CUTANEOUS AND SUBCUTANEOUS LESIONS*

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Bacteria of the paratyphoid or *Salmonella* group have occasionally been isolated in man from lesions remote from the intestinal tract. These micro-organisms are mainly associated with enteric disturbances, rarely producing a bacteremia or septicemia. Invasion of the blood stream by the paratyphoid organism appears associated with symptoms as severe as encountered in typhoid fever. Localized lesions of the paratyphoid group may follow a recognized systemic invasion, and also appear without a history of antecedent enteric disturbance or obvious bacteremia.

LITERATURE

The literature dealing with the systemic invasion of the *Salmonella* group has in later years received several scattered case reports. Harvey¹ recently reviewed the literature on the *supestifer* type, presenting fifty cases with a definite diagnosis, and contributing twenty-one additional cases. Maxwell² reports two cases of paratyphoid infection of the upper respiratory tract. Gijon³ records a case of arthritis and Cohen,⁴ a case of pericarditis with pneumonitis. Two cases of paratyphoid osteomyelitis occurring at the Charity Hospital of Louisiana were reported by Veal⁵.

From the case reports it appears that the

paratyphoid group has no particular site of predilection when producing localized pathology beyond the intestines. The etiology of the abscess is rarely anticipated. On exposure, the purulent material may suggest the *B. coli* group. Routine bacteriologic examination usually establishes the nature of the micro-organism. The antibody titer of the blood in such patients rarely exceeds that incurred in the gastrointestinal types of infection.

A parallelism in the pathologic and immunologic picture is found between the *Salmonella* infections and those produced by the *coli*, typhoid and *proteus* organisms in so far as concerns abscess formation.

A search for case reports on *Salmonella* infections of the skin and subcutaneous tissue has failed. No doubt such infections have been observed. By comparison it may be noted that subcutaneous abscesses from typhoid bacilli are recorded as uncommon, if not rare, and infections by the *Proteus* group recognized as frequent.

DISCUSSION OF CASES

A recent instance with fatal termination, caused by *Salmonella morganii* in association with non-hemolytic streptococci and staphylococci, led to a re-examination of several somewhat similar infections having been observed at the Charity Hospital since May, 1936.

Of the cases herewith reported, two patients died, one incurred amputation of a leg, a fourth suffered infection of the hand with necrosis into the metacarpal bones, one was lanced for a compound fracture and one had extensive ulcerations on one leg.

Four of the six cases occurred in colored people. In one fatal case, complications were diabetes and a chronic bacillary dysentery. A second fatal case had a mixed infection, following an injury to the right knee. Marked arteriosclerosis was present in the patient on whom amputation of a leg was necessary. The remaining three had no obvious complicating constitutional factors.

Certain impressions seem of sufficient sig-

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

nificance for comment. In two cases with fatal termination, over 1000 c.c. of pus was evacuated from fluctuating masses in the thighs. Toxic manifestations were lacking and severe localized pains absent in these and the other patients.

The fever charts fail to show the elevation of temperature and the "septic" nature as encountered in deep staphylococcus abscesses.

In four instances the extraneous source of infection seemed evident. In one case the hematogenous route was fairly definite, as the abscess formed in the thigh during the patient's stay in the hospital. In the sixth case the source remains doubtful.

A very limited number of stool and urine cultures failed to reveal these as possible sources of surface pollution. The white cell counts and chemical urine examinations were too few to permit deductions.

No difficulties were experienced, and this appears to be the rule, in the isolation and culture of the bacilli from these cases. Their proper classification has been a matter of concern for reasons that should be more commonly known.

In view of the undoubted pathogenicity of these micro-organisms it is hoped that similar cases be more frequently recorded and that the various laboratories preserve and consolidate such isolated cultures. It will then be possible to effect a more satisfactory classification of members of the *Salmonella* and the *Proteus* group. The material at hand suggests the formation of a third group to include strains now loosely placed in either two aforementioned.

CLASSIFICATION

In the American classification of micro-organisms by Bergey⁶, the so-called paratyphoid bacilli which is a most heterogenous group, constitute a part of the *Salmonella* (the new terminology). The so-called Morgan bacilli are also in this group. In the English classification, according to Topley and Wilson⁷, the Morgan bacilli are listed with the *Proteus* group.

The differentiation of the *Salmonella* and the *Proteus* groups hinges to a large extent

on the failure of the former (*Salmonella*) to ferment sucrose and failure to liquefy gelatin. It becomes somewhat confusing to find the Morgan bacillus which does not react on the two media, in the *Salmonella* group and to have the American classification list several species that fail, like the Morgan bacillus, to ferment sucrose and liquefy gelatin in the *Proteus* group.

Fermentation of sugars by bacteria as a means of classification today no longer enjoys the prestige of former days. It is, however, useful within limits. Bacteriology today concerns itself more with so-called antigenic complexes in learning what substances are held in common and apart. It is on the basis of such analysis that Raus⁸ (and accepted by Topley and Wilson) places the Morgan bacillus with the *Proteus* group.

The interpretation of reactions with sucrose is attended with greater difficulties than that encountered with other sugars. The very slow liquefaction of gelatin can be interpreted on a different basis than from its rapid digestion. Nor is the use of gelatin in many southern laboratories so rapidly carried out at the proper temperature of 20°C.

The micro-organisms isolated from these cases had characteristics of the Morgan bacilli. Serologically two strains appear related to paratyphoid B and the aertrycke strains. None fermented sucrose when used with difco peptone. Nor was mannite fermented. Slow liquefaction of gelatin was produced by four strains but no "swarming" or motility was observed, yet in all other cultured respects they differed from the species of the *Proteus* group in the American classification.

In view of the present trend to classify on the basis of structural components (antigenic complex) the final identification may have to be deferred until more such strains have been gathered. The use of gelatin as a means of differentiation is at present unsatisfactory. The possible development of other simple means for differentiation for the use of smaller laboratories should be encouraged.

It would appear that there exists a group of bacilli intermediate between the recognized and extensive paratyphoid varieties and such forms of the *Proteus* group encountered in the urine and as secondary invaders in surgical wounds. Several similar strains have been isolated at the Charity Hospital from deeper abscesses. In destructive action they are as severe as streptococci and staphylococci.

CASE REPORTS

Case 1. L. A., a colored male, aged 58, sustained an injury to the right knee. Two weeks later the infection was lanced and drains inserted. As a result of the continued infection the patient entered this hospital, after a lapse of an additional two weeks. A large fluctuating mass extending upward from the knee on the medial aspect of the thigh was noted. Roentgen rays revealed no pathology of the femur and partial destruction of the cartilages in the knee. Incision two days after admission yielded 1200 c.c. of pus. The culture of the pus revealed non-hemolytic streptococci, *Staphylococcus albus* and a *Salmonella morgani*.

The patient died two weeks later. The autopsy diagnosis reported acute suppurative arthritis, dilatation of the heart and luetic mesaortitis.

The serologic data are: negative Wassermann reaction on the blood and no agglutination for typhoid, paratyphoid B, Flexner and Hiss dysentery strains.

Throughout his stay in the hospital (sixteen days) he was afebrile, except for slight elevation of temperature on the last four days.

Case 2. M. G., a colored female, aged 50, was admitted because of pain in the left leg. The patient had been diabetic for three years and suffered a persistent diarrhea. A possible subcutaneous abscess of hematogenous origin was suspected. Two weeks after admission a 12 cm. incision was made in the left leg and 1000 c.c. of pus drained. A culture from the wound shortly after lancing gave a pure culture resembling *Salmonella morgani*, but liquefying gelatin. A clinical study had demonstrated reddened shallow ulcers of the intestinal wall and no parasites had been found. Serologically the patient showed agglutination in 1:320 for Flexner type dysentery bacilli.

On admission a white cell count of 17,000 was noted. The blood sugar on admission was 252 mg. per 100 c. c. blood, with urea nitrogen of 14 mg. The diabetes was fairly well controlled with insulin.

In spite of supportive measures and adequate drainage from the wound, the patient died seven weeks after admission. The anatomical diagnosis from the autopsy was: cellulitis of left leg and thigh, toxemia, diabetes mellitus.

The temperature reached 103° prior to incision, then dropped to 101° and remained at this level until death.

Case 3. S. G., a colored male, aged 57, was admitted for pain and swelling of the left leg. The symptoms had been present for three weeks. Trauma or previous ulceration of the leg was denied. Although poorly developed and undernourished, the patient did not appear acutely ill and throughout his stay of three and a half months had but slight fever.

The left leg showed anteriorly on the upper third a fluctuating area with tenderness over the tibia. Roentgen rays revealed no bone or periosteal changes; roentgen rays of the lungs were essentially negative. The Wassermann reaction was negative.

Aspiration was made five days after admission and four days later incision was made. Culture from the wound was obtained on two occasions two weeks after incision, and yielded a *Salmonella morgani*-like organism that liquefied gelatin slowly.

Three weeks after admission amputation above the knee was performed. The wound continued to discharge purulent material for a month. Twice was it necessary later to remove protruding bone. Examination of the amputated leg showed thrombophlebitis and arteriosclerosis.

A single feces culture was negative for typhoid and dysentery bacilli and yielded an organism similar to that from the wound. This culture unfortunately was not kept for serologic study.

Case 4. V. P., a colored female, aged 48, was admitted for ulcers on the left foot of six weeks' duration. The patient had originally scratched a pimple on her left ankle. Owing to spread of the infection, she was treated unsuccessfully at the dispensary. The entire left foot and leg was swollen. Many shallow, separate and confluent ulcers of the skin were found on the anterior and medial surfaces of the leg. Cultures on two occasions from under the wound edges gave a few streptococci and staphylococci and large numbers of bacilli resembling *Salmonella morgani*, but liquefying gelatin. Roentgen rays revealed no bone or joint involvement. The Wassermann reaction was negative and the blood sugar and blood urea were normal.

A fever not exceeding 100° existed for three weeks, when it became normal. The patient was discharged greatly improved after nine weeks. Cleaning and application of dressings was the only treatment employed.

Case 5. L. S., a white male, aged 25, had a laceration on the back of the right hand which was incurred in a fight, when the patient struck the teeth of his opponent. Two stitches were inserted immediately after the injury in the acci-

dent room of the Charity Hospital. The next day the hand was swollen and treatments were carried on for one week. Incision and drainage were then done, but no improvement followed.

A month after the onset of the injury the patient was admitted to the hospital. On two occasions surgery was necessary owing to bone necrosis of the third metacarpal bone. Smears of tissue and from the wound did not show fuso-spirochetal infection. Cultures yielded a non-hemolytic streptococcus and a bacillus of the *Salmonella morgani* type, slowly liquefying gelatin. Agglutinins in the blood were found in titer of 1:160 for typhoid and for the isolated bacillus. The urine and feces did not yield organisms that fermented lactose.

The patient was discharged after two weeks with a healing wound.

Case 6. H. S., a white male, aged 35, was admitted for infected comminuted fracture of the left femur, fracture of the left radial and ulnar bones and phlegmon of the left hand.

A month after admission open reduction of the femur was performed. After an additional two months, incision of the same region was necessary. The pus yielded a pure culture of a bacillus resembling *Salmonella morgani*, but liquefying gelatin readily. The motility of the organism was positive, sucrose fermentation was negative. Spreading of colonies and pleomorphism of bacteria was absent.

The patient at this date, six weeks later, is still in the hospital. The femoral wound is still discharging pus. The patient has been afebrile since infection was incised.

CONCLUSIONS

1. Bacilli resembling the *Salmonella morgani*, but some liquefying gelatin, have been isolated from six cases of infection in the skin of subcutaneous tissue.

2. These organisms, directly or associated with other factors, were responsible for death in two patients and amputation of a leg in a third case.

3. The immunologic response to these organisms differs from common pyogenic infections.

4. The present classification employed in the *Salmonella* and *Proteus* groups appears inadequate.

5. A greater interest in reporting clinical cases with similar infections will assist in a better classification and encourage the study of immune processes involved.

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DISCUSSION

Dr. J. K. Howles (New Orleans): I think we are all greatly indebted to Dr. Fasting for bringing to our attention these unusual manifestations of the paratyphoid group, the so-called *Salmonella* group.

We are all acquainted with the systemic and cutaneous, mostly systemic, manifestations and complications of the typhoid bacillus. Recently there has crept into the literature a considerable number of reports of an increasing nature of the complications of a systemic type of the paratyphoid or *Salmonella* group.

There is all the reason in the world to believe that this disease should produce systemic reactions and cutaneous reactions, as much so as the typhoid. No doubt most of you, I am sure, and I am one of them, are a bit hazy about the classification of this particular group of diseases, and I beg of you not to be annoyed at your haziness, because the specialists who deal with this particular type of bacilli are just as much at sea. I think Dr. Fasting's report will help clear up this muddle and help to establish some sane and acceptable classification between the two schools, particularly the American and the English classifications.

I am interested primarily in the clinical aspects, therefore, and I should like to touch just briefly upon these cases as presented by Dr. Fasting. Some of them were definitely of hematogenous origin, and they are the most important. We have every reason to believe that we should find localized abscesses in the skin. Since evidence of the infection is found in the bones and in the organs, why shouldn't it be found in the skin, which is one of the means of excretion, and in which are found so many similar abscesses associated with concomitant disease. For instance, a necrobiosis, as frequently found in diabetes, to me is comparable to this condition. The ones that were caused apparently by extrinsic infection were usually associated, if I understand it correctly, with contaminating organisms, staphylococci and streptococci, and other flora that are usually found on

the skin. It is absolutely impossible to sterilize the skin without harming it to the point that you kill it, and with all the indentations and invaginations, the openings into the skin, such as the sweat and sebaceous orifices, it is natural that a number of infectious organisms would creep into the skin, get into the deeper layers, into the intercellular spaces, and eventually set up inflammation.

The thing that impressed me about the localization of these lesions Dr. Fasting spoke of was that most of them occurred on the lower extremities. That could possibly be explained, especially from the extrinsic standpoint, by soiling from stools and other excretions.

It also seems to me that the low temperature, the low degree of toxicity, and the extreme amount of pus that was found in these cases all speak for concomitant infection that co-existed with this disease.

I, for one, am very grateful to Dr. Fasting for emphasizing the importance of the laboratory study of cultures, and the examination of smears. At once the thought comes to my mind, what about the poor country practitioner who hasn't the time or the equipment to do all that? The answer to that is, where there is a will there definitely is a way. Our greatest contributions in medicine have come from these country practitioners who have found the time and the inclination to find the way.

THE PRESENT STATUS OF SERUM THERAPY IN PEDIATRICS*

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CHICAGO

In discussing the present status of serum therapy in pediatrics, I will consider it from the standpoint of available serums. These are the animal (mostly horse) serums, either antitoxic, antibacterial, or these in combination, and the human convalescent serums.

A potent serum corresponding immunologically to the infection to be treated, given in sufficient dosage early in the disease is of aid in bringing about recovery if no serious complicating factors exist. The value of the serums decreases as the dose is diminished from the proper level or as the disease progresses. It should be further remembered that the passive immunity conferred by immune serums is of short duration, lasting on the average only

some two weeks or slightly longer. For a further understanding of the curative value of this class of products it may be mentioned that with most antitoxins laboratory tests give an accurate estimate of their actual immunity value, but with antibacterial serums the parallelism is by no means so close. This is because of the difficulty of reproducing in suitable experimental animals such infectious diseases of man as pneumonia or meningitis, although such toxemias as diphtheria and tetanus may be approximated closely enough in guinea pigs and other common laboratory animals. There still remains the little understood realm of the non-specific stimuli of which serum proteins are capable. It should be borne in mind that the injection of foreign protein, especially in the amounts represented by the average serum dose, alters the individual's physiologic response to subsequent injections of a similar protein as well as presenting the dangers of immediate or delayed serum reactions. For this reason the use of heterologous animal serums should be limited to situations warranting their use.

DIPHTHERIA ANTITOXIN

This serum represents one of the greatest advances in applied immunology. From time to time its antitoxic content per given volume has been increased, the product has become more stable, and has been freed to a large extent from the non-specific proteins. This serum is used in both passive immunization and therapy.

In diphtheria the toxin unites first with the adjacent tissues, the excess passing by way of the lymphatic channels to the blood and so throughout the body. Two factors are of great aid in the matter of treatment with this serum: First, that in an ordinary case of diphtheria only a very moderate amount of toxin escapes being fixed by the local tissues at the seat of the disease and passes to the blood within the first 24 hours; in the second place, there is a period of a few hours after the toxin has come into contact with the cells when the union is incomplete and the toxin can still be neutralized by the antitoxic serum.

Dosage is dependent on the time element and the manner of administration. It is obvious that the sooner it is given, the greater the probability of neutralizing the toxin before it has produced any lethal effect upon the tissues.

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Intramuscular administration is recommended for mild and moderate cases, while in severe cases, those showing laryngeal involvement, and neglected cases of the nasal type, both intravenous and intramuscular administration are recommended. It is to be remembered that serum is absorbed from an intramuscular injection to produce a maximum blood concentration within 24 hours, whereas in an intravenous injection the total antitoxin is available immediately.

The serum is most valuable when the entire dose is given at the first injection and in sufficient quantities to meet the exigencies of the case. The following table will prove an adequate guide for the dose to be used.

TABLE No. 1

Weight of Patient	Moderate	Severe
Under 50 lbs.	10,000	50,000
Over 50 lbs.	20,000	100,000

Any hesitance about dosage should be dispelled by the decision to administer the larger amount recommended.

Any suspicion that a patient is suffering from diphtheria demands the immediate injection of antitoxin in full doses without waiting for a bacteriologic report.

During the past two years an increase in the incidence of diphtheria has been reported in various sections of the United States, with the presence of a greater number of severe and malignant types. This has been noted even in sections where intensive active immunization has been practiced. There has also been an increase of the disease in adolescents and adults. These cases demand large doses and early administration of serum. It is therefore necessary, in the presence of such increased incidence and severity, to re-Schick children so that the susceptibles may be located and re-immunized. In cases recently exposed and those showing positive cultures, serum administration is indicated for immediate protection.

The continuous intravenous administration by the drip method of large amounts of 10 per cent glucose in normal saline seems to be beneficial to those patients showing toxic effects upon the parenchymatous organs, chiefly the heart and liver. The introduction of fluids intravenously must be slow, in order not to overburden the heart. One or more liters in 24 hours, depending upon the weight of the patient

and the ability to eliminate fluids, are recommended.

TETANUS ANTITOXIN

The specific treatment of tetanus with tetanus antitoxin was introduced more than thirty years ago. Although it has been employed extensively since that time, the voluminous literature that has accumulated is quite diverse and conflicting in regard to the value and methods of serum therapy in cases of tetanus.

It is generally agreed and has been amply demonstrated during the World War, that as a prophylactic, tetanus antitoxin ranks with diphtheria antitoxin as an absolutely specific means of prevention of the disease when properly administered. Because of the nature of the disease, in that operation may be necessary or the injury continues to suppurate, and because serum is eliminated rather rapidly from the body, a single dose is usually insufficient. A subcutaneous dose of 1500 units, preferably near the site of the wound, repeated at weekly intervals until the injury is healed, should provide adequate protection.

In the field of therapy, however, the use of serum has not been attended with the same success. One fact is outstanding to the effect that every hour lost after development of symptoms makes the prospect of success less bright. It is a well established fact that cases developing clinical symptoms of the nervous system during the first four to eight days show exceptionally high mortality, while those developing in the second week show a much lower death rate and not infrequently recovery without therapy.

Sedative therapy is indicated as an initial procedure in every case. Avertin, per rectum in dosage of 50 mg. per kilo body weight has proved effective in many cases. Its administration should be preceded by a cleansing enema carefully administered. It may be repeated as indicated, or supplemented by sodium amytal by mouth or intravenously in proper dosage. Morphine sulphate in small doses has been used to produce a prolongation of the avertin sedation.

Antitoxin Therapy.—Antitoxin should be given as promptly as possible, but not until the patient is under the control of the sedative. Avoid doing a spinal puncture except when

doubt exists concerning the diagnosis. Intraspinal serum injections cause headache, fever, and in many instances may start convulsions of a serious nature. Give a large intravenous injection of antitoxin. Often it is preferable to dilute the serum with normal saline and to administer it by gravity, thereby reducing the possibility of sudden anaphylaxis. In cases with incubation periods of about a week approximately 60,000 units may be employed. In those with shorter periods of incubation, doses up to 200,000 units might be recommended. It is the first injection which is of definite value. In many cases subsequent injections are thereby avoided. In all cases be prepared to treat anaphylactic shock with adrenalin.

Surgical Treatment.—Surgical treatment should be delayed until the convulsions have been controlled.

Nursing Care and Symptomatic Treatment.—A special nurse is to be on duty with the patient at all times throughout the 24 hours as death from asphyxia may occur in the absence of an attendant.

Patients who are unconscious from large doses of sedatives often require frequent aspiration of the nasopharynx. This aids in the prevention of aspiration pneumonia. Frequent changes of position, when the patient is sound asleep, also serve to prevent pneumonia.

Close attention is to be given to the fluid intake. Dextrose is especially indicated in the first stages because of previous starvation and exhaustion. The feeding schedule and manner of feeding are to be determined by the condition of the patient.

The patient should have frequent sponge baths, as discomfort from heat and perspiration is a cause of restlessness and even of convulsions.

The occurrence of the serum reaction from the fifth to the tenth days of the disease (after administration of serum) is a critical period. Convulsions may recur of alarming severity and cause sudden death from asphyxia. Consequently, adrenalin hypodermically should be used as often as necessary, together with the local application to the body surface of carbolyzed calamine solution to which menthol has been added in appropriate amount.

Blood Transfusion.—In cases of severe exhaustion, blood transfusions may cause marked and sudden improvement. The blood should be given as slowly as possible because of the state of exhaustion.

ERYSIPELAS ANTITOXIN

The new preparations are both antibacterial and antitoxic, having been developed in the blood of the horse as a result of the graded injection of toxins and living cultures of *Streptococcus erysipelatis*.

Gordon and Young report that the results obtained with the serum were sufficiently gratifying in 248 cases to warrant further studies. Reports from Bellevue Hospital are to the effect that they have experienced good results with the newer products now on the market.

In the evaluation of what may be expected from treatment with this serum, several factors warrant consideration: The age, especially in children, is most important—very young infants show the least response; variations in the severity of the disease from year to year are quite marked; and the site of distribution of the erysipelas lesions on the body affect the severity of the disease profoundly.

ERYSIPELAS CONVALESCENT SERUM

Convalescent serum has also been used with variable success in the treatment of this disease. In some cases early administration of a large dose of convalescent serum (60-80 c.c.) is attended by a drop in temperature and rapid improvement in the general condition; repeated dosage may be necessary. In other instances, results have been unsatisfactory. In my experience, intravenous use of human convalescent scarlet fever serum has been more effective than convalescent erysipelas serum. I have seen some instances of marked improvement following the additional use of the newer preparations of erysipelas antitoxin.

In Cook County Hospital, as well as in private practice, I have experienced some very gratifying results by the daily repeated intramuscular injection of 20-40 c.c. of whole blood, especially in the case of young infants. Where blood is used, it is well to take it from the individuals who have in the past shown a marked resistance to streptococcus infections. In older children I have seen many striking results fol-

lowing intravenous transfusion. The danger of infecting the donor must be borne in mind and careful surgical technic must be employed. Repeated ultraviolet or roentgen ray irradiation of the affected parts has proved, in my experience, to be very effective in limiting the spread of the infection and shortening the course of the disease.

SCARLET FEVER ANTISTREPTOCOCCUS HORSE SERUM AND ANTITOXIN

Scarlet fever is another disease caused by a streptococcus in which favorable results have attended the production and use of serum. Dochez serum is prepared by injection of living cultures of scarlet fever streptococci, and Dick serum is made by injection of the filtrates of broth cultures which contain the toxin.

Passive Immunization.—Due to the fact that the contagious index is low in older children and direct and intimate exposure is often necessary to the development of the disease, together with the fact that horse serum sensitizes the patient to whom it is administered and that it is frequently accompanied by severe serum reactions, I feel that the prophylactic use of scarlet fever horse serums is not to be recommended, except under exceptional circumstances.

Therapy.—Numerous reports in the literature in general agree that antistreptococcic horse serums exert a favorable effect on reducing the severity of the toxic symptoms, the course and duration of the fever, and the extent and duration of the skin lesions.

Due to the reactions to horse serums, enumerated under passive immunization, one can appreciate the tendency to reserve this form of therapy to more severe cases.

SCARLET FEVER CONVALESCENT SERUM

Serum prepared from convalescent scarlet fever patients has been quite widely used and with satisfactory results. It is now available in many cities.

Passive Immunization.—The experience from the Deutsch Serum Center in the use of human convalescent serum in 945 individuals directly exposed to the disease resulted in the protection of 97 per cent. The doses administered intramuscularly were 10 c.c. in children and 20 c.c. in adults.

It is to be remembered that passive immunity lasts only for about two weeks, so that in prolonged or recurrent exposure repeated injections are advisable. There being no sensitization from the use of human serum, no reaction need be anticipated.

Therapy.—Our experience at the Deutsch Serum Center in Chicago, covering more than 2000 cases, leads us to expect diminution of temperature, toxemia and angina, fading of the rash, shortening of the duration of illness, and reduction in the frequency of complications. The most striking results are seen when the serum is given early and in large doses, 40-100 c.c. intravenously. In such early cases, one injection is usually adequate. Intramuscular injections are recommended when the intravenous administration is not possible.

Even when given late or when complications already exist, amelioration of symptoms and rapid recovery have taken place. It should be our aim to treat patients early in the disease, as severely complicated cases at all times offer a serious prognosis.

Where convalescent serum is not available, whole blood intramuscularly from cases known to have had scarlet fever may be employed.

Among the striking therapeutic results none are more gratifying than the recoveries one sees following massive intravenous transfusion in toxic and occasionally even septic cases of scarlet fever. Proper typing is essential. The ideal donor is one recently convalescent from scarlet fever or when such a case is not available, the second choice lies in the donor who has had scarlet fever. In septic cases one should not hesitate to repeat intravenous transfusions until recovery is assured. The end result justifies the means adopted. Careful surgical technic is paramount for the protection of the donor.

ANTIMENINGOCOCCIC SERUM AND ANTITOXIN

In meningococcus meningitis the use of antimeningococcic serum has resulted in a marked reduction in mortality and in the physical damage that follows infection with this organism. Either the serum or antitoxin should be administered in every case of meningitis due to the meningococcus, and I believe, should be administered in every case of purulent meningitis

when a definite bacteriologic diagnosis cannot be established.

The serum has been available for many years. The antitoxin which has been more recently introduced by Ferry and his associates is prepared by the injection of a filterable exotoxin into horses. There is as yet no convincing evidence that the antitoxin offers advantages over the serum.

It has long been my custom to use the serum both intraspinally and intravenously. More recently, reports have appeared advocating the use of the serum or antitoxin by the intravenous route alone, but I am still adhering to this combined method of treatment except in cases of pure meningococcemia confirmed by positive blood culture and without evidence of meningeal involvement.

The recent trend has been in the direction of increased dosage by the intravenous route. The amount advocated at present varies from 30-100 c.c., depending upon the age and condition of the patient. This intravenous dose should be repeated every 12-24 hours until the infection is definitely under control. The serum should be diluted with from two to three times its amount of normal saline solution when administered intravenously. Adrenalin should be at hand for emergency administration.

ANTIPNEUMOCOCCIC SERUM

Long-continued laboratory study has proved that the introduction of dead pneumococci (of Types I and II, at least) into the animal body leads to an active immunity as shown both by resistance to subsequent infection and by the presence of agglutinins, and other protective antibodies in the serum. Type I serum prepared according to the original or modified method of Cole and that of Felton, administered in full doses within the first three days of the attack, frequently checks the disease and reduces its fatality. Antipneumococcic serum prepared from Type II organisms has proved less efficient. Those for Type III and IV have been found to have little clinical value up to date. Unfortunately, clinical reports of organisms isolated in the various studies now available, lead us to believe that the pure Type I organisms are the specific cause in only a limited number of cases in young children; most

of them fall into the Type IV group. For this reason, the horse serum treatment of pneumonia has up to this time had only a limited place in the practice of pediatrics.

Human Serum.—For the last two years I have employed pooled convalescent type specific pneumonia serum in the treatment of early cases of pneumonia in children. This clinical study is still in the experimental stage, but a preliminary review indicates that the febrile course is shortened and the toxemia relieved. Because the mortality of pneumonia in children is low, the study must wait until it contains enough cases to be able to draw any conclusions in this regard.

ANTISTREPTOCOCCIC, ANTISTAPHYLOCOCCIC, AND ANTIGONOCOCCIC ANTIBACTERIAL SERUMS

While these serums contain specific agglutinins, complement-fixing and other antibodies, their therapeutic action is variable and no definite prophecy can be made as to results because of the difference in reaction of the human organism to these infections and the varying virulence of the various strains among these groups.

A number of reports have appeared, particularly in the English literature, on the use of scarlet fever antitoxin in hemolytic streptococcus infections with favorable results. Because human serum is available, I have employed convalescent scarlet fever serum in hemolytic streptococcus infections. Several reports have appeared in the literature, which indicate a beneficial effect exerted by such therapy in many instances, although the results are not so uniformly striking as should be expected from a specific serum.

More recently I have seen some striking results following chemotherapy in streptococcus and meningococcus septicemia. In most of my cases sulfanilamide was used together with serums and blood transfusions.

ANTIRHEUMATIC FEVER SERUM

There still remains a grave question as to *Streptococcus cardio-arthritis* being the specific cause of rheumatic fever. Personally, I have had no experience with the use of this serum in pediatrics and believe it well to await further investigation as to its place among therapeutic measures.

ANTIDYSENTERY SERUM

Polyvalent serums made by actively immunizing horses with the Flexner, Shiga and other strains of the dysentery bacillus are available for the treatment of bacillary dysentery. The literature contains very few reports on the use of this serum in childhood. Personally, I have had no favorable experience with its use.

POLIOMYELITIS CONVALESCENT HUMAN SERUM

Convalescent human serum was first used in New York City in the 1916 epidemic by Draper and Zingher, who reported results that caused this form of therapy to be accepted as an effective therapeutic measure. Other reports followed, which quoted favorable results in early paralytics but more especially those treated in the preparalytic stage. Because of the nature of the disease, no control study was done until 1931 when New York City had an epidemic of such proportions that the supply of convalescent serum available was inadequate. Consequently, many cases diagnosed as preparalytic poliomyelitis were not treated with serum. The results reported by Park, Kramer and others, Fisher and Landon led to the conclusion that untreated preparalytic and paralytic cases have as high a rate of recovery as the treated cases, and they raised the question as to convalescent serum having any therapeutic value. Taking into consideration the fact that the statistics were compiled neither on alternate cases nor on a comparable series (because the untreated groups quoted by some of these authors were definitely a milder group of cases), the verdict remained that the results of the studies are inconclusive, and future studies must be made on more comparable and more completely controlled groups of cases.

Unfortunately, a study of this kind has not yet appeared. Although the results of the New York epidemic of 1931 were really inconclusive, the great doubt expressed as to the value of serum therapy caused a general reaction unfavorable to its use. It is difficult to understand this reaction.

At the Round Table Discussion on poliomyelitis of the American Academy of Pediatrics held in New York City June 7, 1935, Dr. Carl H. Laws made the following statement: "Notwithstanding the total failure of statistical

presentations to favor certain types of serums, clinical observations almost universally made of rapid symptomatic response to the administration of serum by an immediate drop in temperature and marked improvement in symptoms cannot be totally disregarded. All other forms of therapy in this disease have been a signal failure, with the possible exception of spinal drainage. There appears to be enough evidence from clinical observations to warrant the continued use of serums in early stages of acute poliomyelitis."

Various reports state that 50-80 per cent of patients diagnosed as having been seen in the preparalytic stage remain nonparalytic. Cowie, Parsons and Lowenberg report that 96 per cent of 81 patients diagnosed as being in the preparalytic stage escaped paralysis, and in the three cases in which paralysis was shown, it was light and subsequently disappeared. In a group of 27 patients treated by them at the appearance of paralysis, three recovered completely, six were definitely improved, making a total of 33.3 per cent as compared with a group of 17 patients with paralysis, receiving no therapy, of whom 11.6 per cent showed improvement. Their treatment consisted of 20-30 c. c. of convalescent serum intravenously and 20-50 c. c. intramuscularly, and the intravenous transfusion of 100-200 c. c. of whole blood from either convalescent patients or from adults.

Claus Jensen, reporting on the Danish epidemic of 1934, used large doses in preparalytic and paralytic patients, which were repeated at the slightest sign of progress of the disease, and concluded that serum played a significant part in preventing paralysis.

Henry and Johnson believe that serum has value as soon as the first symptoms occur and before the onset of paralysis. The Swedish Committee on Poliomyelitis, and Christensen in an independent report, expressed the same opinion, stressing particularly large amounts of 100-300 c. c. of serum intravenously.

During the late 1936 season immediately after Labor Day, there was a sharp rise in the incidence of the disease in Illinois. A total of 618 cases were reported, of which 240 were in Chicago. The results in Chicago this year, with larger doses intravenously than were used in previous years, have been most encouraging.

Not only has the residual paralysis in the treated preparalytic cases been almost negligible, but I have personally observed many bulbar cases suffering from an unusually severe disease make striking recoveries following serum therapy. There are other factors involved in the treatment of these patients, such as the avoiding of trauma, complete rest, constant and intelligent nursing, and feeding care, necessitating in the bulbar cases often the institution of permanent nasal catheter, and further necessary equipment for aspiration of mucus by suction. It is not within the scope of this paper to take these up in detail at the present time.

At present, I am using a minimum dose of 100 c. c. of serum intravenously in children. The initial dose for adolescents, adults and bulbar cases is 200 c. c. intravenously. In the event that there has not been a satisfactory clinical response manifested by temperature drop, decrease in prostration, and cessation of progress of the disease within 12-24 hours, or in bulbar cases in 6-12 hours, a second dose of the same amount of serum is again given intravenously. Further injections are governed by the response of the patient to the therapy. Our moderately severe and bulbar cases have received 200-400 c. c., all intravenously.

In passive immunization, Flexner and Stewart have advocated 10 to 20 c. c. of human serum. Proper evaluation of this prophylactic measure is extremely difficult because of the low incidence of susceptibility and is impractical because of the limited amount of serum.

In the absence of convalescent serum, pooled normal adult serum or even blood transfusions may be considered as a substitute measure. The blood of city bred adults has, in many individuals, high virus neutralizing properties.

Efforts directed towards active immunization by means of vaccines have met with many difficulties and must be considered in the experimental stage.

The report by Armstrong and Harrison on the use of picric acid alum nasal spray as a preventive against poliomyelitis aroused much interest and speculation. During the 1936 poliomyelitis epidemic, two of my patients had their nasal passages treated for ten days, and a third case for twelve days, previous to the

development of symptoms. Previous to the spraying, these three cases had been directly exposed to active cases and had been under observation by their family physicians throughout the incubation period. The realization that acute hemorrhagic nephritis or other toxic effects may follow the use of picric acid, as reported by Rutledge in the October 17, 1936 issue of the *Journal of the American Medical Association*, should make us hesitate to use extensively or indiscriminately the picric acid alum spray.

ANTIMEASLES SERUM

Many and varied have been the bacteria that have been described as being intimately associated with measles, if not the sole cause of it. I need only mention the serums prepared by Tunnicliff, by Ferry and Fisher, and by Degkwitz. The experiences reported following the use of these serums are inconclusive.

In 1918 Nicolle and Conseil used convalescent serum in passive prophylaxis and since that time the use of such serum has become widespread, with a consistent success of either complete protection or modification of the disease in over 90 per cent of the cases. The dose is 3 c. c. for infants, increased to 10 c. c. for older children. Usually, when given within four days after exposure, an attenuated disease is likely to follow. After this period no modification of the measles can be expected even when larger doses are given. It is advisable to secure complete protection in children under three years of age and in sick or malnourished children; but in older and healthy children measles attenuated by serum administration is desirable, for the latter produces a permanent immunity, whereas in those completely protected, the immunity is of short duration. In 2412 measles contacts treated with measles convalescent serum from the Samuel Deutsch Serum Center, complete protection was secured in 57 per cent and attenuated measles appeared in 37 per cent. Of those contacts in which the serum failed to protect, many were given an insufficient dose or received the serum administration too late in the incubation period.

Pooled adult serum has also been used in doses of 20-40 c. c., depending on the size of the patient, with quite satisfactory results. Whole blood parenterally in quantities of 30 c.c.

or more given intramuscularly soon after exposure will also modify the course of measles in the great majority of instances.

Placental extract, first advocated by McKhann as a means of preventing measles in exposed children, has been equally effective. The commercial products, however, have not been as innocuous as the material prepared by McKhann, and severe reactions at times have been encountered. With greater care in the preparation of the product, or refinement of the material, placental extract should be a valuable prophylactic measure.

Recently some clinical investigation has been carried out at the Samuel Deutsch Serum Center on the use of convalescent measles serum in the treatment of measles. The serum was administered in 50 c. c. doses intravenously when Koplik's spots were observed but before the rash had appeared. This study is still in its incipency, but indicates that modification in the disease is produced, as determined by the low temperature, milder symptoms, and atypical rash.

CHICKENPOX CONVALESCENT SERUM

There are a number of reports showing that when convalescent serum was given in 5-10 c. c. doses within the first two days after exposure to chickenpox, the serum has proved quite effective in producing complete protection. The Samuel Deutsch Serum Center reports show complete protection has been secured in over 90 per cent of exposed cases. Gordon and Meader reported 92.7 per cent complete protection. Other reports are less favorable.

Due to the fact that it is difficult to secure and maintain any appreciable quantities of convalescent chickenpox serum, an attempt has been made to evaluate the use of pooled normal serum in the same manner as it is used in measles. Such a measure is of real necessity in a contagious disease hospital. With the use of 40 c.c. of normal pooled serum in exposed susceptible children in the contagious disease hospital, a protection rate of over 90 per cent has been achieved.

MUMPS CONVALESCENT SERUM

Alfred F. Hess, Barenberg and Ostrofi found that 6-12 c. c. of whole blood from convalescent patients when injected before the

seventh day after exposure, was highly protective. Smaller amounts, 2-4 c. c., of serum injected before the seventh day after exposure are reported by Regan as giving excellent results, only one of 70 developing the disease. Skrotsky employed 5-15 c. c. Delavergne and Florentine feel that injection of serum in 20 c. c. amounts soon after the appearance of the parotitis exerts an ameliorating effect on the course of the illness and the frequency of complications.

PERTUSSIS CONVALESCENT SERUM

Debre, using pertussis convalescent serum in 3 c. c. doses, reports that if given early in the incubation period, it produces complete protection; if administered towards the end of the incubation period, a mild illness follows; but if given during the invasive period, it will not influence the disease. Gillot reports similar findings. There are but few reports on the therapeutic use of pertussis convalescent serum. Battley feels that in 20 c. c. doses the serum causes marked improvement, while Lesne and Petot are convinced that although there is no effect on the number or intensity of the paroxysms, the serum exerts a markedly beneficial effect on pertussis bronchopneumonia. Due to the high mortality of pertussis in very young infants, we are about to undertake the treatment of such infants with human convalescent pertussis serum. I believe this problem worthy of serious consideration.

PERTUSSIS VACCINE

For completeness, a word may be necessary covering the prophylactic use of commercial pertussis vaccines. In my experience, while I am meeting with some mild and an occasional more severe case of whooping cough in previously vaccinated children who have passed a sufficiently long period to have developed immunity, nevertheless I am favorably impressed with its possibilities.

CONCLUSIONS

It may be seen from this review that serum therapy, highly satisfactory in some diseases, is unsatisfactory in others; that it may be highly effective in prophylaxis but discouraging in therapy. Although there is no gainsaying the value of statistical analysis in establishing the efficacy of therapy, such means should not be

the only criterion in arriving at a conclusion. Clinical observations in individual cases are guides that should not be disregarded. In many conditions where mass statistics show questionable results, individual observation of cases points to the contrary. Serum therapy is still in its developmental stage. Refinement and concentration of serum, more complete knowledge of the disease, of types, and of similarities and dissimilarities of the different strains of organisms will undoubtedly lead to even more satisfactory results. The development and success of serum therapy during the short time it has been in use, gives promise of further success in the future.

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TRANSURETHRAL PROSTATECTOMY*

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Surgical methods of relieving urinary obstruction caused by hypertrophy of the prostate gland have been discussed liberally during the past decade. At the present time opinion concerning the relative value of various methods is just as divided as it was at the outset. There are many reasons for this difference and nothing worth while can be added by attempting explanations. Suffice it to say that unwarranted criticism of other methods has been voiced by advocates of each type of prostatectomy. After careful study of the subject, Hugh Cabot, an unbiased observer, has recently written: "The real nub of the question turns upon the decision as to who is to treat by operation these people with obstructing prostates. If they are to be treated in the future as in the past, largely by the general and perhaps occasional surgeon, then the indications are for an operative method as nearly foolproof as can be. But this does not seem a high ideal for surgical practice. If it is the standard that we are to accept, then we must take it with the mortality which in this country at least has rarely been below 15 per cent or even 20 per cent. That any elderly man is likely to shy at such a risk will be evident. If these men are to be treated by experts, then transurethral resection can already claim over 5000 such cases carefully observed in which the mortality has been below two per cent and the hospital confinement has been less than

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a week, with functional results the equal if not superior to those obtained by the older methods."

At The Mayo Clinic, during the year 1936, 750 patients were accorded surgical treatment for prostatic hypertrophy. One of these patients was subjected to suprapubic prostatectomy because fixation of the hips by arthritis prevented abduction of the legs; hence, urethral instrumentation was impossible. The remaining 749 patients were accorded transurethral prostatic resection. A brief consideration of these cases seems in order.

TYPE OF CASE ENCOUNTERED

It is an interesting fact that contrary to common opinion the mean age of patients who are requesting and who are being subjected to transurethral resection has steadily increased. The operation is not being applied as a prophylaxis against subsequent development of urinary obstruction. On the contrary, the increase in the average age as well as in the actual number of patients submitting to operation has been due almost entirely to the large number of men in the eighth and ninth decades of life who, having heard of friends who safely withstood operation, themselves elected to seek relief of long standing annoying urinary obstruction which they had tolerated rather than accept the risk of prostatic enucleation. Certainly, the operation in such cases has proved a great boon. Because of a large increase in the number of men beyond the age of seventy years, the percentage of men less than fifty-five years of age, who have been subjected to operation, has declined to 6.8 per cent of the entire group. Furthermore, more than half of this last group were men who suffered from inflammatory bars and contractures rather than adenomatous prostatic hyperplasia.

The degree of urinary obstruction matters not at all; in fact, the patient who has complete retention which has required catheterization for weeks or months is generally a better subject for operation, as the repeated drainage of urine has kept the muscle tonus of the bladder good. In contrast, the patient who still is able to void and yet has a pint or more of residual urine generally has a flaccid bladder which sometimes recovers slowly in spite of very thorough opera-

tion. In such cases uremia may exist; hence, treatment preliminary to operation will be necessary.

PREOPERATIVE PREPARATION

Many recognized authorities on the subject of urinary retention say that preparation preceding operation should be identical, regardless of the choice of surgical method for relieving the obstruction. When one considers the difference in approach to the prostate gland, such statements certainly seem illogical. Physical examination should be equally thorough, but other than that the indications for preliminary treatment are different. It has been the practice for years to drain the bladder through a urethral catheter preliminary to suprapubic prostatectomy. The operative approach is then through the abdomen. On the other hand, if the method chosen is transurethral resection, urethral insult with catheters prior to operation should be kept at an absolute minimum. Unless definite renal insufficiency exists, preliminary drainage by an inlying urethral catheter should be avoided. By following this principle, fever and chills, both prior and subsequent to operation, will usually be avoided. During the year 1936, approximately 70 per cent of the patients were operated on without resorting to preliminary drainage with an inlying catheter.

CHOICE OF INSTRUMENT AND TECHNIC

The surgeon should choose the type of resectoscope with which he is most familiar. At times, it has seemed that postoperative reaction is less if a punch type of resectoscope is used rather than one in which cutting is done by electric activation of a wire loop. Probably, in equally skilled hands, postoperative morbidity is about the same with any of the standard types of resectoscope. I prefer to use the knife punch and during the past two years have employed only the Thompson resectoscope. With this instrument large amounts of tissue can be removed within a reasonable operating time. During 1936, the average weight of tissue removed was 17.2 gm. and in 164 cases the removal of 30 to 112 gm. was necessary in order to produce a satisfactory anatomic and functional result. Unless the obstruction is thoroughly removed, a poor stream, tenesmus, dysuria, fever and finally protracted pyuria are inevitable. A false idea prevails that resection

of only enough tissue to form a gutter through the prostatic urethra will result in complete restoration of function. This is distinctly a misconception; unless all of the prostatic tissue which projects into the bladder is thoroughly removed, a large nodule of tissue may at any time fall into the internal urethral orifice and obstruct the flow of urine. I have seen many cases in which transurethral operations resulted in exactly this type of continued urinary disability.

Operative technic can only be developed by actual experience. One quickly learns the various tricks which are essential to success in manipulating the resectoscope. Thorough knowledge of the anatomic landmarks and keen study of the gross differences between the appearance of adenomatous hyperplastic tissue and the fibrous tissue of the prostatic capsule are requirements which must be tediously mastered. Haphazard, slipshod resection of fragments from scattered areas in the prostatic urethra will only result in trouble for the misguided patient. Removal of tissue from the region of the neck of the bladder, or in other words, from the vesicoprostatic juncture and the base of the gland, must be relatively thorough and complete. Tissue may often be left near the verumontanum in the apex of the prostate gland, with impunity, particularly when the gland is unusually large. In about 10 per cent of cases a second operation must be done before normal urinary function is restored.

POSTOPERATIVE CARE

Adequate control of hemorrhage and thorough constant drainage of the bladder through a urethral catheter are the two most important points in postoperative management. Well-made hemostatic bags are now available and are being used more and more. Following inflation with an ounce or so of water, slight traction is exerted on the bag and excellent hemostasis is generally produced. The catheter to which the bag is attached should be irrigated regularly in order to prevent the blockage of its lumen by small blood clots. Traction on the bag should be released within three or four hours, lest the external sphincter be injured by long continued pressure. Generally, at the end of twenty-four hours the bag can be de-

flated and replaced by an ordinary catheter. At the end of forty-eight hours, the catheter should be removed and the patient permitted to void as he pleases. Six hours later, a catheter is passed again to determine the presence or absence of residual urine. Unless the patient has voided all but an ounce or two of urine, an indwelling catheter is again inserted and fastened with adhesive tape. If at the end of a week, micturition is not effortless and complete, another operation is performed.

After patients leave the hospital they report regularly at the office where the urine is inspected grossly, and watched particularly for evidence of late hemorrhage. If this occurs, reinsertion of a catheter for a day or two is generally the only measure needed, but in exceptional cases the bleeding must be stopped by fulguration.

It has been our practice at the clinic to prescribe methylthionine chloride (methylene blue) in doses of one grain (0.065 gm.) three times daily. This drug generally is soothing both locally and mentally, particularly for the patient who worries about each micturition.

By the end of the second week, the very large majority of patients will have practically clear urine and will urinate only once or twice each night. At the end of a month, healing is complete in all but rare cases, and most of the patients void urine free from pus and do not have nocturia.

COMPLICATIONS

Hemorrhage and infection of various sorts accounted for most of the complications. During 1936, hemorrhage which was regarded as severe occurred in 3.5 per cent of the cases. One should not hesitate to return the patient to the operating room to evacuate clots from the bladder and stop the bleeding by electrocoagulation; this was done in sixteen cases during the year. Suprapubic operation for the control of hemorrhage is never necessary; at least it has not been in my experience. Blood transfusion after control of the hemorrhage is a wise procedure; if there is ever any doubt whether it is required in any case, the best policy is to give it anyway.

Epididymitis occurred in thirteen cases. At the clinic we do not routinely ligate the vas

deferens or perform vasectomy, although the latter operation was done in 161 cases (19.3 per cent) during 1936.

Chills followed by fever of varying degree occurred in 11.9 per cent of the cases. In most of the cases, however, the fever was very transitory and subsided promptly when accurate drainage was restored with a catheter. Daily recurrence of fever, which suggests pyelonephritis, was infrequent, although many of the patients undoubtedly had renal infection. With restoration of an unobstructed urethra, the infection almost always cleared up.

MORTALITY

There were eleven deaths among the 749 patients subjected to transurethral resection during 1936. This is a mortality of 1.5 per cent. One death was caused by pulmonary embolism and three deaths were caused by pneumonia. The other deaths were the result of infection within and without the urinary tract; four of them were due to septicemia. No definite explanation is available, for at necropsy in all of these cases the operative site was healing nicely and there was no evidence of perivesical or periprostatic suppuration. Three of the eleven patients died within a week, two others on the twelfth day, one on the fourteenth day, one on the sixteenth day, one on the seventeenth day, two on the twentieth day and one on the twenty-second day after operation. In most of these cases fever came on late, in several instances after the patient had left the hospital subsequent to a normal first week convalescence. In the majority of these cases, it seems unlikely that the bacteremia was produced by trauma at the time of operation; it is more likely that it occurred secondary to infection which developed a week or more later.

CONCLUSIONS

1. Complete prostatectomy by transurethral resection is a feasible operation.
2. If necessary, such operation can be performed to relieve urinary obstruction in all cases except those in which there is an enormous enlargement of the gland.
3. Routine preoperative preparation is every case will result in more harm than good.
4. Postoperative attention must be constant

in order to insure thorough drainage at all times.

5. Complications are few and the mortality is low in comparison with any other type of prostatectomy.

RECENT ADVANCES IN ANESTHESIA*

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INHALATION ANESTHETIC AGENTS AND METHODS

Nitrous oxide, ether, and chloroform are still most frequently used as general anesthetic agents, while cocaine hydrochloride and procaine hydrochloride are used predominantly as local anesthetic agents. The newer types of gas machines for administering inhalation anesthetics employ the carbon dioxide absorption technique which greatly reduces the cost of anesthesia to the patient. By means of rebreathing, it is no longer necessary to use a continuous flow of anesthetic gases, since the exhaled gases are passed through soda lime, the excess carbon dioxide is removed, and they are returned to the patient to be re-inhaled. Anesthesia is continued more smoothly, because one is able to control the amount of carbon dioxide necessary to promote quiet respiration. Once surgical anesthesia is produced, it is necessary to use additional gas only intermittently, and this because some is lost through leakage about the face mask and the connections with the gas machine. A basal requirement of oxygen is the only agent which is supplied continuously to maintain metabolic processes.

This method of rebreathing by the carbon dioxide absorption has made possible the use of cyclopropane, which is a relatively expensive inhalation anesthetic. This agent, like ethylene, is inflammable and explosive, but produces more rapid anesthesia with less excitement than does ethylene and it may be used with higher concentrations of oxygen. Relaxation obtained with cyclopropane approaches that produced by

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diethyl ether; recovery from anesthesia is rapid, and the incidence of postoperative nausea and vomiting is minimal. It is important that the character of the pulse be closely watched during the induction of anesthesia, because in certain cases cyclopropane is known to produce cardiac arrhythmia. If sudden changes in the character of the pulse occur during the induction of anesthesia, it is safest to discontinue the administration of cyclopropane and change to some other anesthetic agent such as nitrous oxide or ethylene. Likewise, if, during the course of anesthesia, the patient does not seem to tolerate the agent well, which is manifested by cardiac irregularity or marked respiratory depression, or both, the concentration of cyclopropane should be diminished, or preferably, another agent should be used. If a close check is kept on the quality of the pulse and respiration, one will be more quickly aware of any idiosyncrasy which a patient may manifest in response to this anesthetic agent.

In all methods of anesthesia the intratracheal tube of soft rubber is a decided aid when there is obstruction to the airway or when there is serious respiratory collapse. In the latter case, the tube may be used to carry on artificial respiration in the event that respiration ceases. The tube may be introduced orally or through either nostril depending on the individual case. The free end of the tube may be connected by means of special adapters to a gas machine, or a face mask may be placed over it. In operations on the brain it is noteworthy that with the easy to-and-fro respiration permitted by the intratracheal tube the intracranial pressure is reduced because of the absence of straining, and surgical procedures are greatly facilitated.

DIVINYL ETHER

Divinyl ether, or vinethene, is a volatile inhalation anesthetic agent which chemically resembles both diethyl ether and ethylene. On account of its volatility a special apparatus is necessary for its administration by the closed method; however, it may be administered similarly to drop ether if the open drop method is used. The drug is definitely more potent than is diethyl ether, and the periods of induction and recovery are short. Goldschmidt and his associates, who have used divinyl ether

rather extensively, said that its greatest usefulness is for operations which do not require more than a half to one hour. There is some experimental evidence to show that injury of the liver may occur with prolonged administration of this agent, especially in the absence of sufficient oxygen and when there is a depleted carbohydrate reserve in the body. The agent has been used with considerable success in obstetric anesthesia and should prove a valuable adjunct for those who have previously used chloroform entirely.

TRICHLORETHYLENE

Trichlorethylene, or trethylene, is a volatile agent which is non-inflammable and non-explosive. This is a definite advantage which most anesthetic agents do not have. Because it is relatively less volatile than diethyl ether, divinyl ether, or ethyl chloride, it must be administered carefully because a comparatively small amount will produce anesthesia. One should not attempt to force or hurry anesthesia with trichlorethylene, because there is a danger of serious respiratory embarrassment. The degree of surgical relaxation is not as pronounced as with diethyl ether, but recovery from anesthesia is more rapid. The agent has been advocated for certain reasons other than the production of complete anesthesia, namely, to relieve the pain of tic douloureux and to alleviate the pain which is frequently associated with coronary disease. The relief of pain in both instances is probably due to the production of a mild anesthesia and not to any specific selective action of the drug on individual nerves. When trichlorethylene is used for the relief of this type of pain, it is administered by placing 20 to 30 drops of the drug on a gauze sponge or a handkerchief and the patient is instructed to inhale deeply until practically no odor remains. The reliability of this agent to relieve the pain is not consistent, but it may be tried in the event that other measures have failed.

HELIUM AND OXYGEN

Helium is a relatively new gas which has found a place in therapeutics. Because of its low specific gravity (1.98), Barach suggested that it could be used advantageously in cases in which the patients were dyspneic. From a mechanical and physical standpoint, it was

found that less muscular effort would be required to move a mixture of oxygen and helium to and fro in the tracheal bronchial tree than would be required to move a like amount of oxygen. The reason for this is clear since a mixture of helium and oxygen is three times lighter than one of nitrogen and oxygen. Helium tanks may be attached to a gas machine or may be used in connection with oxygen tents. The chief therapeutic uses for helium at the present time have been cardiac disease associated with decompensation and in asthmatic conditions. In anesthesia, it has been found helpful in maintaining anesthesia in cases of hyperthyroidism in which there is retrotracheal enlargement of the thyroid gland or enlargement of the gland and pressure on the trachea which restricts the size of its lumen.

As a means of combating anoxemia, oxygen may be administered by a nasal catheter or by the more frequently used oxygen tent. The nasal catheter method is less expensive and in most instances will serve the same purpose as an oxygen tent, but one disadvantage of the nasal catheter is the discomfort which the patient sometimes experiences when the tube is in the nostril. The tip of the catheter should be placed just back of the nvula. A flow of six to eight liters of oxygen per minute will usually maintain an oxygen percentage of 50 to 60 in the region of the glottis. If the flow of oxygen is too fast, or if the nasal catheter is inserted too far into the oral pharynx, the tendency on the part of the patient is to swallow air.

LOCAL ANESTHETIC AGENTS

Procaine is probably employed more frequently for local anesthesia than any other agent, with the possible exception of cocaine. However, there is a new local anesthetic agent which is being used in local anesthesia; this is called metycaine.⁶ It is both a topical and a local anesthetic which clinically is no more toxic than procaine and produces longer anesthesia with comparable doses than does procaine. The advantages claimed for metycaine over procaine are, therefore, its applicability in producing anesthesia of mucous surfaces and its somewhat longer effect. Certain individuals who develop a dermatitis from using procaine may find that metycaine may be substituted successfully.

VARIOUS METHODS OF REGIONAL ANESTHESIA

Field block of the upper part of the abdomen preliminary to laparotomy under general anesthesia aids in reducing the amount of general anesthetic required and is usually used in cases in which there is debility of a rather marked degree. For operations about the lower part of the rectum and anus, sacral block possesses all the advantages of spinal anesthesia and is accompanied by the minimum of untoward reactions. Operative procedures on the neck, such as laryngectomy, thyrotomy, and dissection of lymph nodes, can be accomplished satisfactorily by blocking the cervical⁸ plexus when it is not advisable to use a general anesthetic.

In selected cases, spinal anesthesia is employed for abdominal operations below the diaphragm and for operations on the lower extremities. It is contraindicated in the presence of marked loss of weight, definite anemia, low blood pressure, or cachexia. Similarly, certain nervous and apprehensive patients are usually poor candidates for this type of regional anesthesia. The dose of the agent to be used should be determined by the consideration of the age, weight, height, and blood pressure of patient, the concentration of hemoglobin, and type of operation which is to be performed. In general, when procaine or metycaine is used, no more than 1 mg. per pound of body weight is administered.⁵ When other agents are used, a similar equivalent ratio is calculated.

In certain operations on the upper part of the abdomen, spinal anesthesia is intentionally combined with a general inhalation anesthesia. In these cases, a small dose of spinal anesthetic is administered in order to minimize the amount of general anesthetic. As a rule, the incidence of nausea or vomiting is increased when spinal anesthesia is used for operations on the upper part of the abdomen. Inhalation of oxygen and carbon dioxide frequently will suffice to control nausea.

Peridural anesthesia is produced by the action of the anesthetic agent on the spinal nerves extradurally and on the spinal ganglions and paravertebral sympathetic nerves. The technic of the injection, which is somewhat more difficult than when subarachnoid block is used, requires more skill and care^{7,9}. The chief advantages of this method, according to Dogliotti,

are: (1) absence of danger of diffusion of the anesthetic toward the bulbar and cerebral centers; (2) a reduction of the anesthetized region to an immediate segment of the body; (3) a fall in blood pressure that is less than that caused by subarachnoid injection; (4) a rather constant absence of nausea and vomiting, which in contrast occurs more frequently in spinal anesthesia; (5) the incidence of postoperative lumbar puncture headache is less than one per cent, and (6) in cases in which the patients are very weak and debilitated there is a greater margin of safety than there is when spinal subarachnoid block is used. The disadvantages observed with this method have been failure to obtain adequate anesthesia in the proper region as a result of lack of proper technic or improper diffusion of the anesthetic solution. Furthermore, there is a delay in obtaining anesthesia which is not present in most cases in which subarachnoid injections are used. Peridural anesthesia is not, therefore, recommended as a substitute for spinal anesthesia but as an added procedure which is useful in certain selected cases.

INTRAVENOUS ANESTHESIA

The short acting soluble barbiturates, such as pentothal sodium and evipal soluble, are becoming more widely used for producing anesthesia for short operative procedures. The action is brief in contrast to the longer acting barbiturates, such as sodium amytal and pentobarbital sodium. When pentothal sodium and evipal soluble are used, the periods of induction and recovery are short and fair surgical relaxation is produced. The period of postoperative excitement, which is sometimes seen when the longer acting barbiturates are used, is noticeably absent when the newer type of preparations are used. Pentobarbital sodium and sodium amytal, however, are still of great value in the control of certain agitated psychoses or convulsive and manic states because of their more prolonged action.

The details of the administration of pentothal sodium have been described elsewhere⁴, but, in general, it may be said that pentothal sodium, evipal soluble or any other short acting barbiturate should be administered intermittently and not according to body weight. Children who

are less than twelve years of age, for the most part, do not tolerate the intravenous administration of barbiturates well because of respiratory depression. Likewise, certain adults who have dyspnea, due either to cardiac or pulmonary disease, do not react favorably to intravenous anesthesia. It is absolutely essential that a free airway be maintained in any case in which an intravenous anesthetic is administered, and it is wise to have a competent assistant hold the patient's jaw forward so that the tongue will not fall back into the pharynx and interfere with an easy to-and-fro exchange of air. Oxygen and carbon dioxide also should be readily available in the event that respiratory depression occurs.

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AIRWAY AND AIRWAYS IN RELATION TO GENERAL ANESTHESIA*

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The anesthetist is a full partner in a surgical team. Responsibilities other than technical are his. He should be equal to all emergencies, relieving the surgeon's mind so that he can devote his entire time to the surgical problem in hand, knowing that he will be kept posted, and that the needs of his patient will be cared for. In order to do this, the anesthetist should be kept posted as to the surgical procedure, so that he can know the relative depressing effects of such

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procedures, and be prepared to anticipate trouble.

There are technical difficulties connected with anesthesia, however, that must be met and overcome. This paper is concerning one of the principals of such difficulties.

One of the essentials to good anesthesia is the maintenance of a free airway. Probably no other one thing is as important in solving the problem of getting the patient under the influence of the anesthetic agent quickly and safely; of keeping the muscular efforts connected with respiration at a minimum, thus conserving the patient's energy; of preventing the expulsion of intestines because of the efforts associated with respiring through a partially obstructed airway; and of reducing the incidence of shock by being able to keep the anesthetic under better control and thus run a uniformly lighter anesthesia with satisfactory relaxation.

OBSTRUCTIONS TO AIRWAYS

Pathologic conditions that might be present *prior* to anesthesia that might lead to obstruction to the airway *during* anesthesia are: polypoid growths or other tumors of the naso-pharynx; hypertrophied turbinates; deviated septums; large adenoids and tonsils; hay fever; peritonsillar abscess; paralysis of a vocal cord; edema of the glottis; infections with swelling; foreign bodies; aneurysms; cellulitis; enlarged lymph nodes pressing against the larynx or trachea; large or retrosternal goiters; scars; infections in, or tumors of, the mediastinum; tumors of the tongue; ankylosis of the jaw; and tumors of the larynx.

Among those that come during anesthesia, either in normal cases, or in abnormal ones like those mentioned, are: falling back of the tongue, obstructing the pharynx; rigid jaw associated with the above; glottic or laryngeal spasm; falling down of the epiglottis, closing off the glottic opening; blood or mucus or stomach contents; loose dentures; foreign bodies, incidental to the operation, like pieces of tumor, adenoid, tonsil or teeth; misplaced forceps hanging across the trachea; a foreign body in the form of an improperly restrained nasal airway, put in by the anesthetist to relieve obstruction, that slips into the trachea.

Obstructions due to diseased conditions and deformities are best taken care of when the condition is diagnosed ahead of time, and adequate preparation made to take care of it.

There are several types of artificial airways at our disposal which, when properly placed, overcome obstructions of various kinds.

PREVENTIVE MEASURES

Marked nasal obstructions are circumvented by propping the mouth open before induction to prevent locking of the jaw in the early stage. As soon as the pharynx will permit, insert an oropharyngeal airway. This can be accomplished before induction by spraying the throat with 10 per cent cocaine, but this is not without some element of danger. Endotracheal maintenance is best if the operation is for the removal of the obstruction.

Trouble from large adenoids and tonsils can largely be avoided if sufficient basal is given to avoid excitement, gas induction with sufficient oxygen to avoid cyanosis, and the slow addition of ether if it is used. It is unfair to children (or to their parents) to submit them to the terrors of the operating room and hold them down while inducing anesthesia, when most of it can be avoided safely by proper premedication and gas induction. Endotracheal maintenance through a Magill tube is very satisfactory to the operator after he accustoms himself to the presence of the tube. It permits constant aspiration of the throat, if needed, and perfect relaxation in all cases. It also permits an all gas anesthesia, and, if cyclopropane is used, assures perfect oxygenation. This prevents engorgement of the tongue which is so often present in fleshy adults. This wide open airway prevents excessive strain on the heart, which is most important in some of these cases.

Where obstruction is due to pressure on the larynx or trachea from enlarged lymph nodes, new growths, thyroids or aneurysms, the introduction of an endotracheal tube as soon as possible relieves or prevents trouble. Spraying the throat with 10 per cent cocaine or 5 per cent butyn before induction, having the patient inhale on pressure of the spray bulb, shortens the interval before passage of the tube is possible. If the operation is of any length these

reflexes will return before they are needed. If the pressure is too great, causing a ribboning, or kinking, of the airway, it may be necessary to do a tracheotomy first. These cases are, fortunately, very rare.

Sometimes the tracheal rings have been absorbed from pressure, and yet the walls of the trachea are held apart by the growth. When the growth is removed the walls collapse. Under these conditions it is usually easy, under direct vision with the laryngoscope, quickly to pass a tube and hold the walls apart until the surgeon can suspend to the musculature.

ENDOTRACHEAL ANESTHESIA

For plastic work on the nose or its floor, lips, eyes, or any other part of the face or mouth, endotracheal maintenance gets the anesthetist out of the way, assures an excellent airway, and permits the movement of the patient's head by the surgeon at will. The same is true of brain surgery. This is especially important where the face is covered, and, should any obstruction develop, it would be hard to work without soiling or misplacing the sterile drapes, or interrupting the surgeon in his work.

In upper abdominal surgery, endotracheal maintenance is quite helpful, for it not only prevents an obstructed airway and helps to make the proper stage of anesthesia easy to maintain, but it makes it possible for the anesthetist to stop the patient's respiration while a difficult piece of work is being done by the surgeon,—work on the common duct for instance. This apnea is quite desirable sometimes, and can be done with safety.

For dental operations under gas, its administration through nasal tubes that extend into the oropharynx, is usually very satisfactory.

A pledget of cotton beside the tubes as they emerge from the nose prevents respiration around the tubes, and, if the tongue is packed back snugly and held in position with gauze, this method of maintenance is next in efficiency to, and in some ways has advantages over endotracheal. It is easy to place these tubes in position under nitrous oxide or ethylene, while the insertion of an endotracheal tube under these gases, without the addition of ether, or some other more potent agent, is not always successful. Clement and McCarthy, who are

far from being novices in the use of nitrous oxide, report successful introduction of the tracheal tube without the use of ether in 46 per cent of the cases they tried over a period of 18 months. The percentage, in as skilled hands, would be higher under ethylene, but would still be quite short of 100 per cent. The attachment shown was made for us by the late McKesson, and has proved very satisfactory. It is designed for use with the McKesson machine, but can easily be adapted for use with other machines.

In thoracoplasties and pneumonectomies or lobectomies, we prefer endotracheal maintenance with the patient prone and on the edge of the table, the arm of the side to be operated on hanging over the side of the table to extend the clavicle. Slight Trendelenburg position tends to allow pus to flow out by gravity, and suction through the tube helps protect the other lung from contamination. Magill has designed a balloon plug for the large bronchus of the diseased lung which is effective in protecting the opposite lung. This balloon is placed in position under direct vision, and requires bronchoscopic skill. Waters has worked out a method of using a cuffed tube, designed by himself and Guedel, which both protects the good lung and gives an open airway.

When the patient is placed on the sound side, and an elevator used to extend the diseased side, and with the arm extended to increase the space between the clavicle and the spine over the latissimus dorsi muscle, the patient has a hard time getting enough oxygen to live on during the operation if only air is used as the vehicle. It really is quite hard on the patient if the operation is on the right side and the heart is compressed by the elevator.

LARYNGEAL SPASM

One of the most troublesome complications to be dealt with during anesthesia is laryngeal spasm. This is especially true with cyclopropane. Spasms are usually due to one or more of three things: forcing the anesthesia too fast with an irritating agent; starting the operation before anesthesia is sufficiently deep; or allowing the plane of anesthesia to rise to the point where reflex stimulation brings on the spasm. I have not a satisfactory explanation for the relatively high percentage of spasms un-

der cyclopropane. Probably it is due largely to technical errors. Some of my friends claim never to get them, so the fact that I do is a confession. Prevention is the best cure for spasms. A slow build up of sufficient tension before the incision is made; maintenance of a plane which will not allow the operative procedure to precipitate a reflex spasm; and anticipation of removal of packs in abdominal work, so that the plane of anesthesia can be lowered before the packs are removed, will reduce the incidence of spasms. Never attempt to pass an endotracheal tube under light anesthesia for it will usually precipitate a spasm. Hurry here usually means worry. A small continuous flow of cyclopropane as suggested by Burford will usually prevent the plane of anesthesia from rising during anesthesia. This takes the place of the gas absorbed by the fats of the body.

Since nitrous oxide and ethylene do not have a tendency to induce a spasm, induction with one of these gases and a gradual build up of the required cyclopropane tension is thought by some to prevent many spasms.

Taking every precaution we sometimes get a spasm, much to our disgust. Then there is the problem of what to do. If it is only partial, a crowing respiration being evident, sometimes a steady pressure on the rebreathing bag will overcome it and permit the stage of anesthesia to be deepened to the point where it will not recur. If, however, an attempt is made at this point to inflate the lungs by sudden forced positive pressure on the bag, it is disappointing to find that the spasm has increased and caused a complete obstruction. Attempts at respiration against a closed larynx, with the reserve oxygen soon used up and cyanosis becoming more marked each moment, are distressing. If the bag is cut out and oxygen forced, a little goes through, enough to keep the color good and to prevent the participation of others of the surgical team and of the gallery, in the troubles of the anesthetist. An endotracheal tube is wished for, but its passage is not practical because the opening through which it should go is closed. The exposure of the larynx with the laryngoscope and a tube ready to insert at the first sign of relaxation, will make its passage possible. The wait is most distressing to all present. If the patient is in good condition,

little damage will be done, but with a diseased myocardium the strain might be too much. I know of one such case where the surgeon was going to do a cardiolysis in the hope of relieving a distressed heart. The patient died before the spasm relaxed. When the spasm is once broken, quite often the anesthesia can proceed to a deeper plane without further interruption. The only 100 per cent satisfactory dealing to have with spasms is to prevent them.

DISCUSSION

Dr. Neal Owens (New Orleans): I would like to express my appreciation to Dr. Caine for his excellent paper and for making available to us this type of anesthesia. I am referring particularly to the anesthesia administered through the intratracheal tube used in association with the Water's cap. This anesthesia has been a boon to oral surgery and to intranasal surgery. It is invaluable in operations for hairlips, cleft palates, and intra-oral lesions, in contrast to the confusion resulting from anesthesia given by the older methods. In administering this type of anesthesia the intratracheal tube is inserted and by means of an attachment inserted in the tube, it is brought out at the angle of the mouth in such a manner that the complete apparatus is carried out of the operative field and thereby causing no interference with the surgeon for the anesthetist is completely out of the way.

There are factors which everyone has to consider in doing operations for cleft palate or hairlip on babies: First, that there be as little anoxemia as possible; second, that no blood or foreign material be aspirated into the lung; and also as little blood as possible be swallowed or carried into the stomach. By intratracheal anesthesia, all these factors can be satisfactorily managed. The trachea may be blocked by the intratracheal tube, and the pharynx may be packed so that no blood reaches the stomach, and following this an anesthesia may be administered with the least possible amount of anoxemia.

The same technic applies to the intra-oral cases where the same factors are concerned.

Dr. Alton Ochsner (New Orleans): I would like to discuss Dr. Caine's paper from the standpoint of the general surgeon and then from that of the thoracic surgeon.

Intratracheal anesthesia, as presented by Dr. Caine, is a great thing for the abdominal surgeon, because it permits carrying out the operative procedure with very little difficulty. Anyone attempting to close an abdomen when the patient is straining, knows what the difficulties are. Many times this is not due to lack of anesthesia, but is due to a respiratory obstruction, and by introducing an

intratracheal tube, as described by Dr. Caine, it is possible to close the abdomen without difficulty.

From the standpoint of the thoracic surgeon the intratracheal tube is not only desirable, but also a necessity, unless one operates in a negative chamber or uses some sort of positive pressure. With the use of Water's method as described, one can safely operate on the diseased lung.

The production of apnea as discussed by Dr. Caine is especially desirable in operating upon diaphragmatic hernias. Instead of having a moving diaphragm, which is difficult to suture, one can easily suture the immobile membrane. The same is true in cases in which total gastrectomy is done. The anesthetist can produce apnea and greatly facilitate the operation for the surgeon.

Another type of case in which the intratracheal anesthesia is of great value is in thyroid disease, particularly in the individual with a large goiter in which weakening of the tracheal rings may result in tracheal collapse unless prevented by the introduction of a tracheal cannula prior to operation.

Dr. D. R. Womack (New Orleans): Dr. Caine introduced intratracheal anesthesia to me some few years ago and I have been grateful to him ever since. The method has met with opposition and often with complaints from the surgeon—some of these will be answered.

Above all, the safety of the patient is of prime importance. Intratracheal anesthesia offers the best possible control of the patient's respiratory system and gives the safest and quickest opportunity for resuscitation should it become necessary. A second safety factor is the closure of the larynx to foreign bodies and secretions. This closure is often not complete but is of definite value as I have demonstrated with the bronchoscope. I have bronchoscoped patients following tonsillectomy and nearly always found blood and secretions extending past the bifurcation of the trachea. A second series in which the tracheal tube was used were bronchoscoped and the amount of this blood and secretion encountered was much less.

A word about the introduction of the tube. Laryngospasm is the greatest difficulty. This can be avoided in large part, first, by a slow gradual induction of the anesthetic and second, by gentle manipulation. The larynx and subglottic tissues react with spasm to any manipulation. If the larynx is exposed and the tube inserted on the first attempt usually there is a minimum of spasm. If, on the other hand, there are repeated attempts at introduction, the laryngeal musculature is usu-

ally thrown into a spastic contraction for varying lengths of time. If this length of time is very great, the patient will become very cyanotic to the discomfiture of the entire operative staff. It is the common mistake of the unskilled in the use of the laryngoscope to attempt to use the upper incisor teeth or alveolar process as a fulcrum to visualize the larynx. If, instead of this method, the tip of the laryngeal spatula is constantly kept in mind and the thought of lifting the epiglottis with it is uppermost in the mind of the operator, better results will be obtained with much less effort. An added thought is to lift gently on the top just as the intratracheal tube is introduced. I believe the direct introduction under vision is more preferable than the blind "stabbing" method. If the tube is introduced under vision there is no danger of carrying foreign bodies (such as pieces of adenoid or secretions) into the larynx. Some observers have feared the carrying down of particles of tissue and other objects with blind nasal introduction. It is a matter of no importance whether tube is inserted through mouth or nose.

Once in situ the intratracheal tube should be completely ignored. In throat work it has often been mentioned that the tube hinders the free use of instruments for various procedures. I have removed tonsils, adenoids, and manipulated mandibles by many varying methods and find the tube to be more a mental than a physical hazard. This statement also applies to the removal of adenoids either by curette or adenotome, when the tracheal tube is introduced through the nose.

In esophagoscopy, the safety factor of an intratracheal tube is so great as to cause the careful operator to use it routinely. The sudden respiratory failure of an esophagoscopy can be a dangerous and alarming thing. The literature contains numerous cautions of this failure with advice to remove immediately the esophoscope. It is much easier to use an intratracheal tube from the start and avoid the terrifying experience.

Following the operative procedure it is always my custom to remove the tube with the suction attached to the proximal end.

Dr. Caine and his staff are to be congratulated on their excellent results with intratracheal anesthesia and I know I have come to rely on it so much that I am uncomfortable until the tube is in place. As Dr. Caine suggested, the method is now practically universally used by the better anesthetists and I feel that it cannot too strongly receive the endorsement of the surgeon.

THE INCIDENCE OF CONGENITAL HEART DISEASE IN THE CHARITY HOSPITAL OF NEW ORLEANS*

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The incidence of congenital heart disease as reported by various writers^{1,12} ranges from 0.1 per cent to 2.5 per cent or more. It will be recognized that many factors influence statistics on this condition. Firstly, the "proportion" may be expressed variously, referring to the number of cases of congenital heart disease in terms of total autopsies, death or admissions, or to the incidence of congenital cases among those diagnosed or dying of "organic heart disease." Secondly, there is variation depending upon the age composition of the groups from which the data are obtained, as instanced by Philpott's⁶ report of findings in routine autopsies: 0.3 per cent in subjects over two years of age and 4.7 per cent in neo-natal cases. Thirdly, there is the influence of the degree of interest in this subject among different clinicians and pathologists. Fourthly, many case histories will be lost in some record systems, because congenital heart disease is often only the underlying or predisposing cause of death; thus the record may be filed in such cases under an "immediate" cause of death such as bronchopneumonia, paradoxical embolism or endocarditis lenta.

This paper reports the analysis of the annual reports, for the decade 1927-36, from the record room, the pathology department and the heart station in a large southern general hospital admitting all types of disease and all ages of patients.‡ Only types of congenital heart disease of major clinical importance were included in the original records; minor types

appear to have been omitted, although no doubt they did occur. Due to the stimulation of Dr. Maude E. Abbott¹², similar investigations are being pursued in many parts of the country, from which there may result a really trustworthy estimation of the actual incidence of congenital heart disease.

TABLE I.

Admissions	472,519
Deaths	27,077
Organic heart disease.....	15,317
Deaths from organic heart disease.....	3,879
Congenital heart disease.....	107
Deaths from congenital heart disease..	42

From Table I it may be seen that 5.7 per cent of all patients admitted during the decade died in the hospital, and that the mortality among patients with organic heart disease was 25.3 per cent. There were 107 patients with a clinical diagnosis of congenital heart disease, and forty-two deaths were due to the condition. The serious prognosis of congenital cardiac disease is indicated by this hospital mortality rate of 39.2 per cent.

TABLE II.

Incidence of	Per Cent
Deaths with congenital heart disease	
In organic heart disease group	1.08
In all admissions	0.009
Clinical diagnosis of congenital heart disease	
In organic heart disease group	0.7
In all admissions	0.023

As shown in Table II, congenital heart disease was found at autopsy in 1.08 per cent of the cases dying with organic heart disease, that is, in one of every 92 such deaths. The clinical incidence (0.7 per cent) was slightly lower, for a clinical diagnosis of congenital heart disease was made in one of every 143 patients diagnosed during life as having organic heart disease. The very low frequency with which congenital heart disease is encountered in the general hospital population has not been mentioned in the literature consulted. In the present study it was found that only one in every 4,400 hospital admissions (or 0.023 per cent) had congenital heart disease recognized clinically, while death with the condition occurred only once in every 11,000 hospital admissions (or 0.009 per cent.)

Separation of the data for the two five-year periods making up the decade demonstrated a

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most unexpected increase in the frequency of both clinical and postmortem diagnosis since January, 1932. In the first half of the decade, 15 cases were diagnosed clinically and five after death. In the second half, 92 cases were recognized during life and 37 postmortem. This signifies that since the end of the first period there was an increase of 514 per cent in the number of clinical diagnoses of congenital heart disease, and an increase of 640 per cent in the number of cases diagnosed after death. This large discrepancy obviously is not correlated with the growth of the institution or with an increase of organic heart disease; since the end of the first half-decade, the total number of hospital admissions increased by 116 per cent, the total number of deaths by only 11 per cent, the number of organic heart disease cases by 48 per cent, and the number of organic heart disease deaths by 38 per cent. As far as these data are acceptable, and it is recognized that all such studies are subject to more or less incompleteness, one is forced to the conclusion that during the five years since 1931 there was either an actual large increase of congenital heart cases or a great improvement in the interest or ability of both clinicians and pathologists in recognizing the condition. Either possibility is difficult to understand, although the latter alternative is most likely the explanation. A similar increase in the postmortem recognition of congenital heart disease has been reported by McGinn¹¹, who found an incidence of 0.6 per cent for the period 1895-1921 and of 1.2 per cent for the years 1921-1935.

During the thirty years since 1906, when all records were destroyed in a fire, the records for 126 individual patients have been filed under "Congenital Heart Disease" as the principal diagnosis. Although many of these available histories were partially incomplete (so as to reduce the available total to 118 cases), analysis revealed the interesting information shown in Table III. From this it is seen that the great majority of all the cases (or 83 per cent) were in the first two decades of life, and that there was almost equal distribution between the sexes and colors.

TABLE III.

Age	Cases
Newly born to 28 days	41
1 to 24 months	20
3 to 10 years	18
11 to 20 years	19
21 to 30 years	7
31 to 40 years	9
41 to 50 years	2
51 to 58 years	2
<hr/>	
0 to 2 years.....	52% } 83%
3 to 20 years.....	31% }
<hr/>	
Race	Per Cent
White	58
Colored	42
<hr/>	
Sex	Per Cent
Male	54
Female	46

Dyspnea was recorded in 63 per cent of all the cases; cyanosis in 52 per cent, peripheral edema in 17 per cent, clubbing in 9 per cent, precordial pain in 8 per cent and epistaxis in 2 per cent. Congestive heart failure was noted in 33 per cent. Systolic thrills were found in 31 cases, of which 18 were in the pulmonic region, three in the mitral, two in the aortic, two in the midsternal region, and six were unlocalized. Systolic murmurs were recorded 98 times, of which 36 were in the pulmonic area, 21 in the aortic, 20 in the mitral, 12 midsternal, and nine unlocalized. In one, the systolic murmur was transmitted all over the body. Diastolic thrills were detected in only two cases, both times in the pulmonic area. Diastolic murmurs were heard 32 times, of which 12 were over the pulmonic area, seven in the mitral, seven in the aortic, four midsternally and two were unlocalized. In 29 cases there were definite changes in the electrocardiograms indicative of various degrees of myocardial damage. Abnormalities in the cardiac outline were described on roentgen ray examination in 40 cases. A Wassermann test was recorded in only 11 instances, of which eight were positive and three negative. Of the 126 cases, 60 died, giving a mortality rate of 48 per cent during the thirty year period; this it will be noted is slightly higher than the mor-

tality rate for the ten-year period which was subject to more detailed analysis.

In many records, both clinical and pathologic, the diagnosis was simply "Congenital Heart Disease." In the others, the acceptable specific types were recorded, and these are listed in Table IV. Other findings of possible relation to the condition were discovered in the histories. The only two patients who showed extracardiac anomalies presented exstrophy of the bladder in one and vaginal atresia in the other. Three cases were markedly retarded mentally. Hydropic degeneration of the placenta was noticed once. Three cases were born

TABLE IV

Diagnosis	Cases
Patent foramen ovale	10
Absent interatrial septum	2
Patent ductus arteriosus	9
Interventricular septal defect	6
Pulmonary stenosis	4
Tetralogy of Fallot	3
Dextroposition of aorta	2
Coarctation of aorta	2
Constriction of aorta	1
Aortic atresia	1
Aortic valvular stenosis	1
Bicuspid aortic valve	1
Right aortic arch	1
Dextrocardia	1
Truncus arteriosus communis	1
Mitral stenosis	1
Tricuspid insufficiency	1
Coronary arteries arising from pulmonary artery	1
Transposition of aorta and pulmonary artery....	1

prematurely, and one was two months over-term. In three cases, the patient belonged to a set of twins. One individual was the thirteenth child born in the family. The possible influence of heredity was shown twice; two of the patients were first cousins, and two others were mother and son. Both parents of one patient were deaf and dumb. The mother and father of one individual, and the mother of another, had been taking intensive antiluetic therapy during several months of the pregnancy. The most frequent complication of congenital heart disease was bronchopneumonia, being definitely diagnosed in 19 of the 126 cases. One case of patent foramen ovale died as a result of paradoxical brain abscess.

CONCLUSIONS

1. The records of the Charity Hospital in New Orleans, for the ten-year period 1927-1936, disclosed that of every 92 deaths attributed to "organic heart disease" one case presented heart disease of the congenital type, an incidence by this definition of 1.08 per cent. This is lower than is reported by some other writers, who analyzed data from pediatric clinics especially.

2. The extreme rarity of the condition as a clinical entity among "all hospital admissions" is emphasized, the incidence by this definition being only 0.023 per cent or 1:4,400. Only one death with congenital heart disease occurred in every 11,000 hospital admissions.

3. The mortality rate from congenital heart disease is high, being 39.2 per cent for the decade 1927-1936, or 48 per cent during the thirty year period 1906-1936.

4. There is some indication that the condition is being diagnosed more frequently in recent years than formerly.

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PREGNANCY IN ACTIVE SICKLE CELL ANEMIA

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AND

GEORGE E. BURCH, M. D.*

NEW ORLEANS

The rarity of pregnancy in active sickle cell anemia warrants the report of an additional case. Lash¹ in 1934 was able to find this condition mentioned only twice in the literature and reported a new case. In 1936, Killingsworth and Wallace², in a study of sickle cell anemia in the southwest, mentioned a patient with active sickle cell anemia in the fourth month of pregnancy. A follow-up report was not given. Sharp and Schleicher³ in the same year reported a 25 year old negress with active disease followed through pregnancy. No sickling was found in the child until the fourth month.

CASE REPORT

A 23 year old negress was admitted to the Tulane Medical Service of the Charity Hospital on March 27, 1937, complaining of pain in the left axilla. On the previous day she was suddenly seized with pain in the left axillary region while lying down. The pain was aggravated by breathing. Dyspnea developed concomitantly, necessitating the use of two pillows for relief. There was no history of chills, fever, or upper respiratory tract infection. She stated she was approximately eight months pregnant. Since early pregnancy she had experienced ease of fatigue and vertigo. No pain, dyspnea, edema or gastro-enteric symptoms had been noted. Three years previously, in her first pregnancy, a similar group of symptoms had developed. Following delivery of a female child, the symptoms disappeared. A second pregnancy was uneventful. It terminated one and one-half years ago with the delivery of a living male child. In the interim she has been symptom free. The remainder of the history is irrelevant. The family history was unknown to the patient. The husband was normal and healthy. He was not available for hematologic studies.

Physical examination on admission disclosed a well developed, but poorly nourished negress of approximately the stated age. She rested comfortably upon a backrest and did not appear acute-

ly ill. The blood pressure was 140/80; pulse 80; respiration 18; temperature 99.3°. The mucous membranes and palms of the hands showed marked pallor. The sclerae were greenish yellow in color. The pupillary reactions were normal. The nose and throat were clear. The tonsillar lymph nodes were slightly enlarged. The lungs were clear. The heart was not enlarged to physical examination. A soft blowing mitral systolic murmur was heard. The rhythm was regular.



Fig. 1—Sickling of Cells in Wet Preparation.

The abdomen was enlarged to the size of an eight months' pregnancy. The height of the fundus was 27 cm. with a vertex presentation. Fetal heart tones were 176 per minute. The liver and spleen were not palpable. There were no areas of tenderness. Pelvic examination showed measurements within normal range. A slight cystocele and rectocele were found. The extremities were normal.

Laboratory Findings: The urine was normal. Blood: hemoglobin 40 per cent; red cells 2.1 million; leukocytes 23,000 with 92 per cent neutrophils and 8 per cent of small mononuclear lymphocytes. Red cells showed polychromatophilia, anisocytosis and poikilocytosis. There were many nucleated red blood cells. Immediate, extensive sickling (Fig. 1) was found in both wet and dry preparations. Icterus index was 15.

While in the hospital the temperature varied from 98.6° to 102.5° F., respiration 18 to 32 per

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minute and pulse 80 to 120 per minute. Within one week she became afebrile. Therapy consisted of iron and intramuscular liver. She left the hospital on April 4, 1937, and delivered a full term male child in her home on April 28, 1937. The puerperium was uneventful. Examination of the patient on June 8, 1937, disclosed no important changes in her general status. The blood at that time showed hemoglobin 45 per cent (Dare); red cells 2,670,000; leukocytes 10,000, with small mononuclears 46 per cent, neutrophils 50 per cent and eosinophils 4 per cent. Polychromatophilia, anisocytosis, poikilocytosis and nucleated red blood cells were found. Extensive immediate sickling was found in wet and dry preparations.

COMMENT

Such complete reports of the characteristics of sickle cell anemia as Steinberg's⁴, Sydenstricker's⁵ and others^{6, 7} make a detailed discussion of the disease unnecessary. The cause of the disease remains obscure. It is familial and hereditary and is apparently transmitted according to the Mendelian law as a single unit dominant non-sex-linked characteristic, confined to the negro. The following classification of Brandau⁸ is adequate:

1. Sickle cell trait (sicklemia): healthy persons with sickling *in vitro*.

II. Sickle cell anemia:

1. Latent: healthy persons who are subject to recurring periods of active sickle cell anemia.

2. Active.

- a. Mild: slightly or moderately anemic patients with sickling *in vitro*, or both *in vivo* and *in vitro*.

- b. Severe: patients with severe grades of anemia with sickling *in vivo* and *in vitro*.

Accurate data upon the effect of sicklemia, or the sickle cell trait, on pregnancy, are lacking. The high incidence of sicklemia in the negro population, five to seven per cent, would seem to indicate that gestation is little affected in these individuals. We have found no data to prove that transmission through the father is significantly more frequent than through the mother. Therefore, we cannot comment upon the effect of sicklemia alone upon the fertility of the female. Active sickle cell anemia, how-

ever, appears to have a definite effect upon the fertility of the female. This is evident from the rarity of cases similar to ours in the literature. Such patients seldom become pregnant, and if impregnated, they are not likely to reach term. In only two of the reported cases^{1, 3} did the pregnancy result in a live, full-term baby. In both cases, sicklemia developed in the child. Our patient also reached term and delivered a live, full-term baby. Six weeks later, when examined for the first time, sicklemia was found in this child. Examination of the other two children from previous pregnancies revealed active sickle cell anemia.

In the reported cases, and in our patient, hematologic studies before impregnation are lacking. Whether or not pregnancy activated sicklemia can only be conjectured. Our patient, prior to her first pregnancy, was free from symptoms, and in the last trimester developed the same clinical picture as described in the present pregnancy. With delivery in both instances, the symptoms have subsided. However, she is now six weeks postpartum and still has hematologic evidence of active sickle cell anemia. Further observations on this phase of the disease are indicated.

The exact mechanism by which active sickle cell anemia causes sterility is not clear. There are apparently two possibilities. The disease itself may in some unknown manner affect the reproductive function, or the mere presence of anemia may be the sole and important factor. Anemia per se, as a cause of sterility and abortion is commonly known^{9, 10, 11}. Meaker states that "anemia has a striking effect; even the milder grades produce considerable depressions of spermatogenesis and presumably also of oögenesis." In such a disease as sickle cell anemia which, because of unsatisfactory methods of treatment, may be present for long periods of time, even through the adolescent period into adult life, one would expect the effects of anemia upon the reproductive functions to be profound.

SUMMARY

A case is added to the very limited group of pregnancy in active sickle cell anemia. Labor terminated normally with a living child and an

uneventful puerperium. The child developed sicklemia and two children from previous pregnancies had active sickle cell anemia. The possibility of the activation of the disease by pregnancy and the effects of the disease upon fertility are discussed.

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DYER:

THE LEPER'S CHAMPION

No one in the United States of America has ever devoted himself so untiringly in behalf of the leper as the late Doctor Isadore Dyer, at one time Professor of Dermatology and Dean of the Medical Department of Tulane University.

"The Lazaretto at Carville is his monument." Unquestionably his labor brought it into existence and saw to its growth both by

the state and national authorities. These unfortunates loved him, "The Father and Founder of the Institution."

Taken from the care of the unscrupulous and the worst pest houses, Doctor Dyer made it possible for a home and medical treatment, all in keeping with Christian principles, to be provided. The efforts in their behalf continued and Louisiana became host to the nation's lepers.

His difficulties were great. He wanted them near to him, in fact, near to the city and his University, where he and his professors could work as a unit. However, the people refused to have the lepers situated near the city and his ambition was shattered.

In time, he developed another plan, to have the National Government take over the responsibility that in reality belonged to them. He succeeded, but the height of his ambition has never been carried out—"the utilization of the nation's scientists in their behalf."

Dr. Dyer was the first on the continent to administer chaulmoogra oil to the lepers and, subsequent to its use, many of them were discharged from the Institution.

It would be becoming for his admirers and followers to join in commemorating his deeds.
—D.

THE SOCIAL SECURITY TAX

The entire profession of the state has been circularized from the headquarters of Region 10, which includes Louisiana, Texas and New Mexico, concerning the Social Security Act in general and more particularly as to how it applies to doctors who employ one or more individuals in the pursuit of their professional activities. It is this group of physicians who are more likely to neglect the obligatory features of this Act, rather than the doctors who have private sanitariums, hospitals and laboratories where a larger number of people are employed.

The Journal of the American Medical Association under date of July 24, in the Organization Section, printed a warning from the Bureau of Legal Medicine and Legislation stating that if doctors did not attend to this matter they would be liable to rather severe penalties. This article also details what the physi-

cian should do about the tax in reference to his salaried employees.

In spite of the information obtained in this circular sent out by the Regional Director and in spite of the warning of the American Medical Association, there are going to be a considerable number of physicians who, with the usual iatritic carelessness about business affairs, will neglect to secure the proper forms which must be submitted to the Bureau of Internal Revenue and which also must be accompanied by the tax. The ordinary physician's tax is 1 per cent of the employee's pay. After deducting this 1 per cent from the wages the doctor becomes the custodian of federal funds and has to account for these monies. Doctors who are interested in sanatoria and hospitals and who have eight or more persons on their payroll must pay a tax as well as collecting a tax from the employees. The returns should have been filed before July 31 covering the first six months of the year. This notice is necessarily late in appearing but if the matter is attended to promptly there will probably be no penalties assessed. After the July return has been made, subsequent returns must be submitted at regular quarterly intervals.

The provisions of the Social Security Act have to do only with the technical employees of the physician. They do not apply to domestic service, nor do they apply to employees in organizations that are exclusively charitable, religious, educational or literary in character. Whether a chauffeur who occasionally drives the doctor on his rounds will be classified as being in domestic service or in professional service is a question which has not yet been answered.

It should not be forgotten that the tax is not only upon the actual money that is paid but if clothing or lodging, food and so on are part of the compensation for the services rendered, then the value of such must be determined and they become subject to tax. The same thing applies to commissions, bonuses and so on. It must not be forgotten that doctors who belong to corporations practicing medicine, as in some of the group clinics and who are paid salaries, are considered employees and they must be taxed and taxes must be paid for them

if their salaries are not in excess of \$3,000 a year.

Lastly, if by chance you have mislaid or lost the pamphlet that was sent to you or do not understand fully the provisions of the Social Security Act, additional information can be secured from the Social Security Board, Smith-Young Tower Bldg., San Antonio, Texas.

TREATMENT OF ANGINA PECTORIS

It is a very common complaint of clinicians that they are unable to do investigative work without adequate laboratory facilities. This is an allegation which cannot be substantiated. Many of the classic investigations in medicine have been done in the ward or clinic without elaborate laboratory equipment. Excellent clinical investigation, that is the investigation of a patient and the study of a patient's symptoms and signs, has been accomplished in the past and today is being done with accuracy and is informative. As a matter of fact up until the last comparatively few years practically all research was entirely clinical. The separation of various fevers, for example, in the past 150 years has been done almost entirely by clinicians. The recognition of important syndromes, such as Addison's disease or, in the case of angina pectoris about which a few words will be said subsequently, Heberden obtained his information entirely from the study of patients. One of the important methods of evaluating new drugs, or even the older preparations, is by study of their effect on a group of patients. Clinical research is by no means a thing of the past and in the future it should rank on a parity with laboratory investigation.

An excellent example of what can be accomplished by studying the patient may be observed in a recent publication of Riseman and Brown¹ in reference to the medicinal treatment of angina pectoris. These two young investigators selected a group of patients who had the classical symptoms of angina pectoris and studied the effect of various drugs on their symptoms. They employed objective as well as subjective measures. Objective evaluation of their therapeutic result was done through the medium of a standardized exercise tolerance test. The subjective response of the patient was judged by the number of attacks and

the severity of the attacks of angina, or of many untoward or unexpected symptoms. They found that distinct beneficial results were obtained by the drugs that have peripheral dilatatory effect, best by glyceryl trinitrate, with erythrol tetranitrate considerably down the scale and sodium nitrite even more so. This is of some interest because other drugs than nitroglycerine have been advocated on the basis or assumption that their action would be very much more prolonged than it is with nitroglycerine. Aminophyllin, which has become an extremely popular drug in the treatment of angina pectoris, ranked high although there were considerable untoward effects noted by this form of medication. Other drugs which were employed, such as phenobarbital, digitalis, and potassium iodide are well down the scale of effectiveness.

Nitroglycerine, it might be said, best should be given in repeated small doses, one tenth of a milligram (1/500 gr.) seems to be as effective as larger doses but has to be taken every hour. Aminophyllin to be effective should be administered in doses of 0.2 grams (3 gr.)

A word might be said about aminophyllin which has been used since 1908 in the treatment of angina pectoris and coronary disease. Other purine derivatives since then have been introduced by pharmaceutical chemists endeavoring to improve the properties of aminophyllin. In a further study of the value of drugs in the treatment of angina pectoris Riseman and Brown² have tried to evaluate these various purine preparations. The details of their method will not be gone into but suffice it to say that they were essentially the same as recorded in the first paper. In this publication, in addition to determining the value of drugs by the methods recounted, they also studied the frequency of gastric distress after varying sized doses and the relative cost of 1000 doses of the different preparations. They

write that the optimum dosage is usually the greatest amount to be given without causing uncomfortable gastric reactions. They found that this was less likely to occur with the sodium acetate preparations of theophyllin and theobromine. The next best was theophyllin calcium salicylate. Of all these preparations theobromine with sodium acetate in terms of cost of 1000 doses was by far the cheapest. These purine drugs which have been mentioned may be undoubtedly the best in the treatment of angina pectoris but whether or not they are the best in treatment of coronary disease is another question. Long continued dosage is necessary when coronary disease exists and it probably will have to be continued throughout the patient's life; it is quite possible a drug such as theobromine with calcium salicylate might be the most effective preparation to be taken over a long period of time. Another factor exists also in that the coronary dilator effect of these preparations varies. This likewise must be considered but probably, on the whole, it does not make a great deal of difference if the drug is administered continuously and regularly and is taken conscientiously for many months or years.

Two other facts should be stressed in regard to the information derived from these two clinical studies. One is that sedatives, while of value in the treatment of patients with angina, should not be combined with one of the purine drug preparations but the maximum effectual dose of each should be determined and then administered. This cannot be done when they are in combination. Lastly, potassium iodide is of little subjective or objective value in the treatment of angina pectoris.

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HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

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NEW ORLEANS

The scientific meeting of August, 1937, was called by Dr. James T. Nix, Director of the Graduate School. Doctors Amedee Granger and R. W. Cooper presented the following paper.

PREVENTION OF RADIATION SICKNESS PRELIMINARY REPORT

Because of the too frequent occurrence of severe nausea and vomiting in patients following irradiation, radiologists have either had to discontinue treatment of these cases before the maximum dosage could be applied, or decrease the daily dosage before a sufficiently high saturation curve of effective roentgens could be reached to produce the desired effect on the tissue irradiated.

Various treatments have been used to prevent the occurrence of radiation sickness with varying degrees of success; but to date none has been found to be specific. Of the treatments previously tried liver extract and nembutal seem to have given the best results. The intramuscular administration of liver extract in 2 c.c. and occasionally 4 c.c. doses as advised by Dietel¹, Webster⁹, and Young¹⁰, has met with some success. In the latter's report of 30 cases so treated 54 per cent were completely relieved, 23 per cent were partially relieved and 23 per cent were relieved not at all.

The oral or rectal administration of pentobarbital sodium (nembutal) advanced by Richards⁵, Peters⁵, and Popp⁴ has been somewhat more successful. Some patients develop a tolerance to the drug, and an occasional one has an idiosyncrasy to it. Trostler^{6,7} has warned that some barbiturates caused an increased sensitivity of the skin to roentgen ray. He has reported three cases and Uhlman⁸ one case in which moderate doses of roentgen ray after the ingestion of barbiturates (phenobarbital) by the patient were followed by intense skin reactions, (thought at first to be roentgen ray erythemas). Trostler^{6,7} accounts for these skin reactions by pointing out that the use of barbiturates produces porphyrinuria and porphyrinemia which in turn produced an increased sensitivity of the patient's skin to roentgen ray. He advises against the routine use of barbituric acid derivatives in patients who are receiving roentgen ray therapy.

In a recent publication by Holmes³ and Hunter, an outline of the treatment of roentgen sickness at the Massachusetts General Hospital has been

given. They divide post-irradiation sickness into three classes:

"Toxic sickness" due to a rapid absorption of foreign protein caused by the breaking down of radiosensitive tissue which has received a too massive dose of radiation. The treatment is supportive and eliminative with a high fluid and glucose intake. By way of prevention, caution in the size of roentgen ray dosage is advised if the sensitivity of the tissue to be treated has not been determined.

"Psychic sickness", which occurs in nervous apprehensive patients, is best prevented by a change of treatment (radium); or by being treated in a different roentgen ray laboratory. Odors in the treatment room should be eliminated.

"True roentgen sickness" is characterized by temporary disfunction of the liver and is partly prevented by a high carbohydrate diet started several days prior to the beginning of roentgen ray therapy. In those cases prone to have severe reactions, continuous drip intravenous glucose and saline are used for 48 hours after treatment.

In October 1936, Friedman² and Drinker reported 24 cases in which radiation sickness was largely prevented by the use of a grounded wire mask respirator. Their experiments suggest that true roentgen sickness is caused by the breathing of ionized air at the same time that the patient is receiving roentgen ray treatment. Elimination of either one of these factors did not result in the production of roentgen sickness. The presence of both was necessary to produce it.

Since this was an entirely new approach to the subject we decided to try it on a series of cases. We have followed as nearly as possible the same technic as outlined by Friedman² and Drinker. The same commercial mask was used as described in their article both with and without the charcoal cartridge.

The mask consists of a soft rubber cup which covers the nose and mouth and is held in place by an elastic band around the head. The patient inhales through a charcoal cartridge and several thicknesses of fine mesh copper screening wire, which are well grounded, and exhales through a mouth valve.

The patients in our series were carefully selected. Only these apparently having true roentgen sickness were used in the experiment. Cases of psychic sickness were excluded. In order to more completely remove the psychic element, we decided not to tell the patients what the mask was expected to do. The curious ones were told that the apparatus was meant to ground and thus protect them from static electricity. They accepted this explanation without question.

The radiation factors used were as follows: 200KV. 8MA. 0.5MM. copper and 1MM. aluminum filter, 50CM. skin target distance, effective wave length 0.14 A°, intensity 33 r/min. in air.

RESULTS

Most of the patients volunteered the information that they no longer suffered from nausea and vomiting and were delighted that they were "getting used" to the treatments. Only one patient, No. 4, complained that the respirator was uncomfortable. She was dyspneic, but she continued to use it. Eight patients reported marked improvement after the first treatment with the respirator, the other two noticed some improvement after the first treatment, but marked improvement after the subsequent ones. No appreciable difference could be noticed in the efficiency of the respiration with or without the charcoal cartridge. Some patients complained that they could not breath as well

through the charcoal cartridge as they could through the wire mesh alone.

In order to prove that the grounding of the wire mesh was necessary to prevent radiation sickness, the following experiment was tried: In three of the patients, No. 2, 3, 4, the ground wire was not connected during one treatment. This was done without the patient's knowledge, and they wore the respirator as previously. Without exception they all complained that they were nauseated and vomited after this particular treatment (two of the patients had very severe reactions.) Their daily dosage had been increased from 100r and 150r respectively to 330r after they began the use of the respirator, and was not decreased at that treatment when the ground wire was disconnected.

Of the ten patients upon whom the respirator was used, eight reported complete relief from nausea and vomiting; two were very much relieved and did not vomit, but admitted that they

RESULTS WITH RESPIRATOR

Cases	Location and Lesion	Number of Treatments	Skin Area Treated Sq. cm.	Daily Dosage	Nausea	Vomiting	Results
1. J. F.	Ca. breast with metastasis	10	154	330r	Yes	Yes	Complete relief
2. C. P.	Ca. cervix	18	154	330r	Yes	Yes	Complete relief
3. M. K.	Ca. cervix	12	154	330r	Yes	Yes	Complete relief
4. R. G.	Ca. cervix	12	154	330r	Yes	Yes	No vomit. Little nausea
5. R. R.	Ca. cervix advanced	8	314	350r	Yes	Yes	Complete relief
6. P. A.	Ca. cervix advanced	8	314	350r	Yes	Yes	Complete relief
7. L. V.	Ca. tongue neck	8	128	300r	Yes	No	Complete relief
8. V. S.	Ca. breast pelvis sterilization	6	314	350r	Yes	No	Complete relief
9. R. M.	Ca. breast preoperative	6	154	330r	Yes	No	Complete relief
10. J. B.	Chr. myelogenous leukemia spleen	8	314	75r	Yes	Yes	No vomit. Little nausea

were slightly nauseated after treatment. While it is felt that this series is much too small to draw any definite conclusions as to the percentage of patients to be benefited by this method of prevention, we feel that the results thus far are very encouraging and warrant continuation of the use of the respirator on a larger series of patients.

We wish to express our thanks to Mr. V. Veillon, technician, who assisted in recording the reactions of the patients.

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LOUISIANA STATE MEDICAL SOCIETY NEWS

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society held a meeting recently at the East Louisiana State Hospital. Dr. Richard W. Young of Baton Rouge read an excellent paper on "Artificial Pneumothorax." Dr. Young's paper was discussed freely and favorably by physicians present.

Dr. Young and Dr. Holt, also of Baton Rouge, were elected as honorary members of the society and Dr. Arthur Long of the East Louisiana State Hospital was elected to active membership.

The next meeting of the Society will be held at Dr. S. L. Shaw's log cabin lodge on the first Wednesday of October.

E. M. Toler, M. D., Sec.

TRI-PARISH MEDICAL SOCIETY

The regular meeting of the Tri-Parish Medical Society was held at Tallulah on August third. The following members were present: Drs. J. P. Davis, President, Wm. K. Evans, G. S. Hopkins, P. S. Parrino, B. C. Abernathy and William H. Hamley, Secretary-Treasurer, of East Carroll Parish; G. W. Gaines, E. O. Edgerton, H. S. Freeman, H. S. Provine, H. C. Sevier, A. T. Palmer and Lerhue Stevens of Madison Parish; E. D. Butler, F. A. LaCour and W. McG. Dollerhide of West Carroll Parish; J. Whitaker, T. P. Sparks and D. F. Davis of Tensas Parish. Drs. R. J. Talbot and W. L. Smith of Monroe; C. C. Thompson of Delhi; W. H. Parsons, Isadore Dyer and B. C. Bronson of Vicksburg, Mississippi, and J. A. Coleman of New Orleans were guests.

Dr. Ralph J. Talbot of Monroe presented a paper on "Respiratory Difficulties of the New Born."

This paper was discussed by Drs. Gaines, Whitaker, Parsons, Dyer, Bronson and Talbot. Dr. W. L. Smith exhibited roentgen ray pictures in reference to the subject.

Dr. Isadore Dyer of Vicksburg presented an interesting paper on "Some Practical Points in Prenatal Care and Management of Prenatal Complications", which was discussed by Drs. Hamley, Talbot, Thompson and Dyer.

Dr. J. A. Coleman, representing the Bureau of Parish Health Administration of the State Board of Health, spoke on "Venereal Disease Control." This subject was discussed by Drs. Sparks, Thompson, Gaines, Whitaker, Palmer, Sevier, D. F. Davis, J. P. Davis, Freeman, Dollerhide, Hamley, Abernathy, Evans and LaCour.

William H. Hamley, M. D., Sec.

ORLEANS PARISH MEDICAL SOCIETY

It will be noted that no news of the transactions of the Orleans Parish Medical Society has been included in this issue of the Journal. This is due to the fact that the Society has been in summer vacation since the last meeting which was held on July 12, 1937.

NEWS ITEMS

Dr. Leon J. Menville addressed the South Mississippi Medical Association, which met in Hattiesburg, Mississippi, during the early part of June, on "Cancer of the Breast." In the latter part of June, he was a guest speaker at the Tennessee Valley Post-Graduate Assembly at Knoxville, Tennessee. His subject was "Irradiation Therapy of Cancer." In the early part of July,

he was a guest speaker of the Denver Radiological Club, Denver, Colorado. At this meeting, he spoke on "Diagnosis and Treatment of Bone Tumors" and "A Study of the Gastro-Intestinal Motor Phenomena." He was also a guest speaker at the American Society of X-Ray Technicians, Denver, Colorado, of which organization, he was made an Honorary Member.

A Fellowship in Medicine at a salary of about \$1000 a year is available at one of the Eastern medical schools. Information relative to this may be had from the editor.

Surgeon Fortunat A. Troie has been relieved from duty at the U. S. Quarantine Station, Miami Beach, Fla., upon the arrival of Assistant Surgeon Paul T. Erickson, about August 10, 1937, and ordered to proceed to the U. S. Quarantine Station, New Orleans, La., upon the departure of Surgeon H. E. Trimble, where he will assume charge of the U. S. Quarantine Station at that place.

Assistant Surgeon Charles M. McGill has been relieved from duty, U. S. Quarantine Station, New Orleans (Algiers) La., effective July 27, 1937, and is to proceed to Savannah, Ga., for duty, Malaria Research Laboratory, in connection with Public Health Administration.

MEDICAL DEPARTMENT RESERVE, TRAINING COURSE

The ninth annual training course for Medical Department reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, Minnesota, October 3 to 16, 1937.

This training course was first inaugurated by the Seventh Corps Area at the request of the Mayo Foundation to give training in military medicine to the young medical men connected with the foundation. Other reserve officers requested permission to enroll and to take advantage of the opportunity to attend the clinical presentations during the morning hours. Such permission was granted and attendance has become so increasingly popular that it is now necessary to limit enrollment.

The program will follow the plan of past years. The morning hours will be devoted entirely to professional work in special clinics and study groups. Officers in attendance may select the course they wish to follow from the wide variety of presentations offered. The afternoon and evening will be devoted to a medico-military program under the direction of the Surgeon of the Seventh Corps Area (Army) and the Surgeon of the Ninth Naval District (Navy).

This training is on an inactive duty status and is without expense to the government. Enrollment

is open to all Army and Navy reservists of the Medical Departments in good standing. Applications should be submitted to the Surgeon of the Seventh Corps Area, Omaha, Nebraska, or to the Surgeon of the Ninth Naval District, Great Lakes, Illinois. Enrollment is limited to two hundred.

The Surgeons General of the Army and Navy have signified that they will attend and it is believed that the Surgeon General of the Public Health Service will also appear on the program.

SOUTHERN TUBERCULOSIS CONFERENCE

The Southern Tuberculosis Conference and the Southern Sanatorium Association will meet at the John Marshall Hotel, Richmond, Virginia, September 29-October 1. An excellent program has been provided in the medical section and the non-medical section. In the former is a group of representative essayists from many of the eastern and northern states, besides the southern states. New Orleans is represented on the program by Dr. Emile Naef who will speak on "Childhood Tuberculosis."

THE ASSOCIATION OF MILITARY SURGEONS

The Association of Military Surgeons of the United States will meet in Los Angeles, California, with headquarters at the Hotel Ambassador, on October 14-16, 1937. A most interesting program has been provided by the program committee for this, the forty-fifth annual convention of the organization.

THE ACADEMY OF PHYSICAL MEDICINE

The Fifteenth Annual Meeting of the Academy of Physical Medicine will be held at the Hotel Walton, Philadelphia, October 19-21, 1937.

The Academy, which is international in scope, will present a scientific program based on reports of the most recent research and practice of the various specialties. In addition to the lectures, demonstration clinics will be held at the Hospitals of the University of Pennsylvania, Jefferson Medical College and Temple University.

A copy of the program may be had by addressing: William D. McFee, M. D., 41 Bay State Road, Boston, Mass.

MEETING OF MISSISSIPPI VALLEY MEDICAL SOCIETY

The third annual meeting of the Mississippi Valley Medical Society will be held at Quincy, Illinois, September 29, 30 and October 1. A most ambitious program has been arranged consisting of 48 teachers and clinicians who will give over 60 lectures and demonstrations in the three day intensive session. The first day will be an All-St. Louis program with 18 clinicians on the pro-

gram; on the second day there will be groups from Rochester and Chicago; on the third day the speakers will come from a wide territory. An innovation this year will be two short courses of instruction, (4 hours each)—one on "Surgery of the Neck" by Dr. Lindon Seed, Associate Professor of Surgery, University of Illinois College of Medicine, and another "Interpretation of Clinical Laboratory Findings" by Dr. M. Pinson Neal, Professor of Pathology, University of Missouri School of Medicine. At the annual banquet to be held on September 30, the speakers will be Dr. R. K. Packard, President, Illinois State Medical Society; Dr. D. S. Conley, President, Missouri State Medical Society, and Dean of the University of Missouri School of Medicine; Dr. E. M. Myers, President of the Iowa State Medical Society; and Rev. A. M. Schwitalla, Ph.D., Dean of St. Louis University School of Medicine. There will be large technical and scientific exhibits. A complimentary stag supper will be given on September 29. The meeting is open to all ethical physicians. A detailed program may be obtained from Dr. Harold Swanberg, Secretary, 209-224 W. C. U. Building, Quincy, Illinois.

LOUISIANA STATE BOARD OF HEALTH

The Louisiana State Board of Health is not receiving the full cooperation it should have from doctors and midwives of the state in the reporting of births and deaths, according to Dr. J. A. O'Hara, President, and as a result executives of the industrial world are obtaining a false impression of the state's health record.

"Vital statistics are the yardstick by which a state's health is measured," Dr. O'Hara declared, "and the first step taken by every industry before deciding on the location of a plant is to inquire into the birth and death rates to find the chances of successful development, which first and foremost depend on good health.

"No intelligent investor wants to adopt a state on the wrong side of the health column, and our figures are entirely out of line, because we can't get complete figures to present a proper picture of our true growth and health.

"The situation is so serious that the Federal government has asked the board to take drastic steps, immediately, to obtain more complete birth returns especially, and even to enforce a law which calls for prosecution of those who do not turn in necessary data within a reasonable time."

To assist the board in collating present records, the WPA has inaugurated a clerical project in conjunction with the Vital Statistics Bureau, under the direction of Dr. P. A. Kibbe. This will be begun within a few days. The state board will

probably be compelled to contribute about \$2500 to this project, at the request of Federal health authorities who are cooperating with state officials.

TO AMERICA'S SCHOOLS

Once more, during the coming fall, winter and spring, the Voices of Medicine will salute the people of America, with the toast "Your Health". This is the well-known title of the radio program of the American Medical Association and the National Broadcasting Company. The coming season will be the fifth; the first two years were devoted to health talks, and the last two seasons to dramatized health messages. This year, the salutation will be addressed particularly to the teachers and students in the Junior and Senior high schools, in the hope that the program will be helpful in illustrating, amplifying, and enriching the health teaching in those schools. The program will be on the air while schools are in session, so that the program may be utilized directly in the thousands of schools which now have or soon will have radio and public address systems reaching the class-rooms. Programs will be announced in advance in *Hygeia*, *The Health Magazine*. While the program is planned especially for high schools, it will not sacrifice the interest which it has held for listeners in the home. To teachers, students and stay-at-homes, the American Medical Association and the National Broadcasting Company will address their message of health education.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the week ending July 17, there were 70 cases of pneumonia listed. This was followed by 48 cases of syphilis and malaria, 40 of pulmonary tuberculosis, 33 of gonorrhea, 24 of cancer, 22 of influenza, 17 of typhoid fever and 13 each of whooping cough and hookworm. For the week ending July 24, syphilis, as usual, led all reported diseases with 76 cases listed, followed by 56 of pneumonia, 44 of gonorrhea and malaria, 33 of typhoid fever, 32 of cancer, 24 of pulmonary tuberculosis and 21 of whooping cough. Other reported diseases were less than 10 in number and of the more unusual diseases there were 7 cases of poliomyelitis reported; 2 each from Caddo, Richland and West Carroll Parishes and 1 from Natchitoches. A case of typhus fever was reported from East Baton Rouge. Of the 33 cases of typhoid fever reported, 12 had their origin in West Carroll Parish and 6 in Richland. For the next week, ending July 31, the following

diseases were reported in double figures: 50 cases of syphilis, 39 of pneumonia, 37 of pulmonary tuberculosis, 35 of cancer, 33 of malaria, 31 of typhoid fever, 18 of gonorrhea, 16 of influenza and 15 of whooping cough. During this week there were 3 cases of tularemia listed and 3 of undulant fever. For the week ending August 7 there must have been a hookworm survey somewhere in the state for 76 such cases appeared in the records of the Bureau of Epidemiology. Of the diseases reported in double figures, there were 49 cases of syphilis, 44 of pneumonia, 31 of pulmonary tuberculosis, 24 each of gonorrhea and cancer, 23 of typhoid and 20 of whooping cough. Poliomyelitis was still appearing throughout the state, there being 7 cases listed with no parish having more than one except Union where 2 were reported.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending July 17, there were 129 deaths in the city, divided 81 white and 48 negro. There were 17 deaths in children under 1 year of age. For the week ending July 24, there was a very small number of deaths reported, there being 65 deaths in the white population and 52 in the negro, making a total of 117. The infant mortality was the same as for the previous week. There was a very sharp increase in the number of deaths taking place in the week ending July 31, there being 160 this particular week. Of this number 91 were white and 69 negro. This large number of deaths is more remarkable in that only 9 occurred in children under 1 year of age. For the next week, ending August 7, there were 146 deaths reported; divided 89 white and 57 negro. There were 17 deaths among children under 1 year of age reported this week.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Hebert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

CONVENTION NEWS

The fifteenth Annual Convention of the Woman's Auxiliary to the American Medical Association, was held in Atlantic City, the playground of America. Over twelve hundred fifty guests were registered and the sessions were exceptionally well attended in spite of the many outdoor attractions which beckoned to the visitors. After the usual routine procedures of opening the convention, reports were read by the officers and chairmen of committees.

It was interesting to note the progress made in the various projects undertaken by the national organization as a whole and the many personal contacts made by the national president.

Although the programs carried out by the State Auxiliaries were along the same lines, each one was adapted to the needs of its locality. Health education in some form was fostered in every Auxiliary; cancer education and eradication of tuberculosis and venereal diseases headed the list in this group. Scholarships and loan funds for medical students were maintained in several Auxiliaries. Money was contributed for relief of flood sufferers in localities where needed; children's wards in hospitals came in for their share of attention, books were contributed to hospital libraries, and health meetings were held in conjunction with civic organizations.

The report from Louisiana compared most favorably with those of other states, and showed activity in the projects undertaken during the past year.

Respectfully submitted,

Mrs. A. L. Levin,
New Orleans.

Thank you Mrs. Levin. Our Auxiliary members are going to enjoy reading your splendid report, and, with the following letter from Dr. Charles M. Horton, President, Louisiana State Medical Society, I am sure we shall feel like working more than ever.

Mrs. Lucian W. Alexander,
Chairman, Press and Publicity.

LETTER FROM DR. HORTON

I welcome the opportunity to give written expression of my views regarding the value of the Woman's Auxiliary. When this organization was first proposed and I was asked to assist in getting it started in the Third District, I opposed it, because I was unable to see any good to be accomplished by such an organization and this

opinion was practically unanimous throughout the district. I know now that this opposition existed because we could not visualize the possibilities of accomplishment of such an organization.

The Auxiliary has left its childhood behind and has grown into charming and attractive womanhood, rendering valuable assistance to the State Society. This is attested to by the fact that all of the past presidents with whom I have discussed the matter have been most enthusiastic in their expressions.

As I stated, in the talk I was privileged to make at the Auxiliary luncheon in Monroe, last April, if the organization had done nothing more than provide entertainment for the women visitors to the annual meetings, this alone would have more than justified its existence.

The wives of the doctors, knowing they will be entertained have been eager to attend the meetings and have established friendly contacts, which they are glad to renew from year to year. Believing as I do in the value of the lighter things

of life and in getting all the real happiness one can out of life, I consider these friendships of inestimable value. Goodness knows, we see enough of tragedy in our ordinary professional life.

Above and beyond all this, however, the Woman's Auxiliary is building up a friendly public feeling toward the medical profession, is assisting in spreading the gospel of preventive medicine, and is aligning itself with other groups of women in combating chronic diseases which afflict the human race.

The program outlined by the president and her cabinet for the current year is most comprehensive and far reaching and has the hearty approval of the State Society.

My hat is off to the ladies for their past achievements and my best wishes are extended for the success of their future activities.

Cordially yours,

C. M. Horton, M. D., President,
Louisiana State Medical Society.

BOOK REVIEWS

Handbook of Orthopedic Surgery: By Alfred Rives Shands, Jr., B. A., M. D. St. Louis, C. V. Mosby Co., 1937. pp. 593, illus. Price \$5.00.

This is a very excellent elementary work on orthopedics. It was written mainly for the guidance of the medical student, but it can just as profitably be used by the general practitioner. The material has been divided into twenty-four chapters, sixteen chapters being arranged according to anatomical region, seven according to pathology, and one for the introduction. All the illustrations are line drawings. This brings out the point illustrated in the text, but it gives a faulty impression when viewing original roentgen ray plates. The most valuable part of the book is the extensive and comprehensive bibliography appended. This is arranged according to the material covered in each chapter and covers fifty-eight pages.

G. C. BATTALORA, M. D.

A Woman Surgeon: By Rosalie Slaughter Morton. New York, Frederick A. Stokes Co., 1937. pp. 399. Price \$3.00.

The story of the life and work of Dr. Morton is vividly portrayed in "A Woman Surgeon." Evidence of the strong drive to accomplish her ambition to become a physician is apparent throughout. In spite of much opposition, first on the part of even her family, and in spite of the obstacles later encountered in the field of medicine,—

or perhaps with the opposition and obstacles merely serving to intensify her ambition,—she achieves an outstanding position in her chosen field.

Personal recognition however was not in itself sufficient. There was the need on the part of this pioneer woman physician to so blaze the way that women coming with and after her might find their paths less arduous; might find that they were more readily accepted in this field and that their contributions were afforded the recognition they were worth.

"A Woman Surgeon" presents not only the picture of a dynamic personality but presents pictures portraying the sympathetic yet grim, relentless fight on disease; presents pictures setting forth the havoc of war, those of almost overwhelming struggles on the part of science against superstition, ignorance, poverty. Only a person with deep understanding, one recognizing and sympathizing with human frailties and strivings, could have accomplished what Dr. Morton accomplished. And only a person gifted in the ability to present simply yet feelingly these portrayals in word pictures could have given the book which Dr. Morton gives in "A Woman Surgeon."

M. P. H. BOWDEN, M. D.

Endocrinology, Clinical Application and Treatment: By August Werner, M. D., F. A. C. P. Philadelphia, Lea & Febiger, 1937. pp. 672. Price \$8.50.

This is a complete, comprehensive, single vol-

ume dealing with every known gland of internal secretion, describing the anatomy and physiology of each in detail.

This volume is of special value to the general practitioner or specialist in that methods of diagnosis and classification of types are as simple as can be found in any text dealing with the endocrines. The therapy and results to be expected from the use of endocrine preparations are discussed and evaluated. Tests for the various endocrine secretions are described. Illustrations and charts are especially noteworthy.

The volume should be in every practitioner's library.

CONRAD G. COLLINS, M. D.

Textbook of Medicine: Edited by J. J. Conybeare, M. C., M. D., Oxon., F.R.C.P., 3rd edition. Baltimore, Wm. Wood and Co., 1936. pp. 1027, including index, 24 illus. Price \$7.00.

The text is aimed to meet the demands of the student and practitioner within as small a "compass" and at as low a price as possible.

The arrangement follows the usual classification of diseases according to the anatomical system chiefly involved. There are separate brief sections dealing with infectious, tropical, venereal and parasitic diseases. In addition, there are chapters on diseases of infants, diseases due to physical agents, poisons and intoxications, and a unique section on common skin disorders.

A considerable amount of repetition is present because of the jumbled arrangement and all in spite of the editor's honest attempt to avoid this undesirable element.

Symptomatology is adequately treated and supported frequently enough by explanations of altered structure and function in the light of modern advances. On the whole, therapy receives the brunt of omission.

Aimed at meeting the practitioner's demands, it is rather surprising to find twice as much space (200 pp.) given to disease of the nervous system as is allotted to cardiovascular and respiratory disease combined (148 pp.).

There is need for elimination of "hang-overs" from a by-gone era. For example, we are still led to believe that alcohol causes arteriosclerosis, disease of the myocardium and chronic nephritis, that tobacco is responsible for extrasystoles, and that high vegetable portion of diabetic diet is responsible for xanthoma diabetorum.

It is the writer's frank opinion that the average student and practitioner should be able and willing to make a rewarded sacrifice of a few more dollars for one of the more complete medical texts at present available.

R. H. BAYLEY, M. D.

Life and Death: By Andrea Majocchi, M. D. New York, Knight Publications, 1937. pp. 300. Price \$3.25.

An autobiography usually is interesting. An autobiography of a distinguished surgeon is bound to give pleasure to a considerable group of medical readers, but also it should interest any one who is thrilled by a life of accomplishment.

Dr. Majocchi began life tragically; his father died when he was a young child as a result of autopsy septicemia and the boy was thrown very largely on his own in order to obtain the desire of his life, a medical education. The first goodly part of the book has to do with his efforts to bring about this ambition. Really it is the most interesting portion, recounting as it does a truly personal account of accomplishment. The last half of the book is somewhat more philosophical and presents the man's mature impressions about medical, social, financial, marital, martial and other problems.

It is of interest to comment on some of the features of the book which are somewhat unusual. In the first place it is translated in rather a stilted, precise style and yet apparently the translator, appreciating that such is the case, descends at times to very ordinary slang: The use, for example, of the terms two-timing and out of luck. He speaks of an abortion as a charming job; he mentions the condition of one of his patients as a hopeless mess. Terms such as these hardly seem appropriate in a book of this character. Some of the medical terms used are, to say the least, unusual: a morbose process, a paralytic ileum, a neurosthenic, hematic fluid, cavitary wound and hepatic concretion. Some of the experiences that happened in the medical life of the author might well be looked upon with considerable skepticism. In one patient after pumping out the stomach he found the remains of eggs which had been eaten three months before and in this same patient found a month later that she had doubled the previous weight.

Dr. Majocchi spent some months in America and did not care much for our customs, our habits and our ways of doing things. As an example, he compares the impersonality of some of our big institutions and clinics to the Baldwin Locomotive Works in Philadelphia, or the Chicago stockyards. He does say that American surgeons are extremely skillful. During his war experience in his early life, the author had the good fortune to know the present Pope, and Mussolini whom he saw repeatedly during his military experiences, and whose talents give rise to unbounded admiration in the author's mind when he was still but a young soldier and not the virtual ruler of a great people. Other names of distinguished individuals in civil, military and professional life

appear here and there throughout the book but these two, of course, are outstanding.

All of these criticisms are for the most part trivial. While at times certain features may jar slightly the sensibilities, at no time do they disturb sufficiently to disturb the interest in what is really a charming, stimulating and vivid presentation of the life of a real man.

J. H. MUSSER, M. D.

Vocational Rehabilitation and Workmen's Compensation: By Carl Norcross, Ph. D., New York City, Rehabilitation Clinic, 1936. pp. 126. Price \$1.00.

This monograph consists of ten chapters and an appendix. These chapter cover: 1) Lump-sum settlements and their place in workmen's compensation; 2) General description of men receiving lump-sum settlements; 3) Physical condition of men following the settlement; 4) How lump-sums are spent.

Chapter nine, which treats of conclusions and recommendations, is particularly well written. The authors believe that early settlements should be effected in difficult cases, but they are decidedly against what is known as lump-sum settlements. Their investigation has proved that most of this money is squandered and that the workman is usually embittered and bankrupt within two years after such a settlement is made. The authors believe that weekly payments over a specified time is infinitely wiser.

Their studies prove that cases classed as neurotics are not helped as a rule by settlement. This is contrary to the usual belief. Physicians engaged in compensation practice frequently advise settlement of a case with the idea that the man will necessarily improve when he is no longer negotiating with the insurance carrier. This is true of malingerers, but not of neurotics, who, after the settlement, must find their own ways and means of receiving treatment.

Although the method of handling compensation cases differs in various states, this critical analysis of the expenditure of money received by injured workmen is of great interest not only to the physician engaged in this practice but to the insurance carriers as well. Both are working for the same end, to-wit: the re-establishment of all possible efficiency in a wage earner. There is no denying that the methods used to accomplish this are more advanced in other states than our own where we have no rehabilitation division. If this publication aids backward states in the building up of more efficient machinery it will have accomplished a beneficial service.

EDWARD A. FICKLEN, M. D.

Pediatric Dietetics: By N. Thomas Saxl, M. D., F.A.C.P., F.A.A.P. Philadelphia, Lea & Febiger, 1937. pp. 565. Price \$7.00.

"Pediatric Dietetics"—We could not wish for a better dietetics! All pediatric and practically all medical conditions are met. The book correlates digestion in infancy and childhood, a sound section on infant nutrition with the dietetic management of pediatric diseases and an appendix which includes height and weight tables, recipes, food classifications with caloric, vitamin and mineral tables. Numerous recipes and plans of several days food, instead of lists of allowed or restricted foods only, will help the pediatrician give excellent material to the patient. How pleased an anxious mother will be to get a week's diet instead of a list of allowed foods. All interested in the child's welfare will find this a very helpful guide.

SUZANNE SCHAEFER, M. D.

Recent Advances in Orthopedic Surgery: By B. H. Burns, B. A., B. Ch., F.R.C.S., and V. H. Ellis, M. A. B. Ch., F.R.C.S. Philadelphia, P. Blakiston's Son & Co., Inc., 1937. pp. 296. Price \$5.00.

This small volume is written for the man who has some knowledge of orthopedics. It attempts to cover the recent literature in orthopedics, mainly the European. The subject matter that is covered is done so in a very clear and concise manner. However, numerous very important conditions are not mentioned. A glaring omission is scoliosis. This book is well worth reading, and it is the reviewer's hopes that further editions will be soon forthcoming.

G. C. BATTALORA, M. D.

Introduction to General Practice: By E. Kaye Le Fleming, M. A., M. D. Baltimore, William Wood, 1937. pp. 150. Price \$2.00.

The author offers a measure of wise counsel for the young doctor planning to start private practice. Attention is called to the many important relations of the doctor to the patient, to his colleague, to the nurse, to the pharmacist, to the law as enacted in England, and to other environmental elements.

An eighteen-page chapter is devoted to national health insurance wherein the author goes on record as an enthusiastic advocate entirely convinced of the "ever-increasing success" of the plan.

Another chapter deals with contract practice and midwifery, closing with "all authorities are agreed that under proper conditions there is no place so safe for the mother to have her baby as in her own home." More interesting would have been some idea of the prevalence of "proper conditions" to justify the implication.

Aside from technical data that is of use only to one starting practice in Great Britain, there is much from which one may obtain a glimpse of the trend of thought and course of the British medical profession in response to modern social demands. The style is pleasing, straight forward and authoritative by one who holds the office of Chairman of the Council of the British Medical Association.

R. H. BAYLEY, M. D.

Child Guidance Clinics: By George S. Stevenson, M. D. London, Humphrey Milford; New York, Commonwealth Fund, 1934. pp. 186. Price \$1.50.

This book should be read by teachers, social workers, judges and philanthropists as well as by members of the medical profession.

In a brief history of the Child Guidance Clinic, the author tells the need it sought to supply, how it was staffed, how financed, wherein it succeeded or failed. The Clinic as it exists to-day is described and its relationship to the child, the community and the practicing physician is discussed.

The psychiatrist and the pediatrician interested in mental hygiene will find this an objective and comprehensive evaluation of the Child Guidance Clinic.

INA HARPER, M. D.

Textbook of Applied Biochemistry: By Frank Wokes, B. Sc., Ph. C., F.I.C. Baltimore William Wood and Company, 1937. pp. 522. Price \$5.00.

This is the first text applying biochemistry to pharmacy. It is an admirable text for students of pharmacy and public health. It is very clearly written and many parts of the text were criticized by outstanding English authorities in biochemistry and its closely allied fields. The topics include, Biochemical Importance of Water, pH, Surface Phenomena and Colloids, Spectroscopy, Ultraviolet Light, Carbohydrates, Fats, Proteins, Enzymes, Respiration, Bacteria, Hormones, and Vitamins. Physicians and medical students will be better served, however, by the standard texts in the field of biochemistry.

HOWARD H. BEARD, Ph. D.

The Treatment of Diabetes Mellitus: By Elliott P. Joslin, M. D. (Harvard), M. A. (Yale), with the cooperation of Howard F. Root, M. D., Priscilla White, M. D., Alexander Marble, M. D. Sixth edition, Philadelphia, Lea and Febiger, 1937. pp. 707. Price \$7.00.

This new edition of Joslin's classical work following within two years after the fifth edition finds its chief justification in the changes made necessary by the appearance of protamine insulin. As Joslin has repeatedly pointed out, the diabetic

story is never complete and just when we think the end is approaching a new chapter is written. He and his associates are most enthusiastic about protamine insulin as a result of their experience with more than 1,000 patients treated with it. There are, however, a number of precautions to be observed in transferring a patient from regular insulin to protamine insulin. The reviewer, while sharing in the enthusiasm for protamine, would emphasize the difficulties in adjusting the dosage, difficulties which it seems to him are greater than with regular insulin. Practicularly, I would stress the value of Joslin's advice that the patient should keep in close touch with his doctor during the period of adjustment.

The chapter on protamine is not the only new thing in this sixth edition. Almost every page bears evidence of careful revision, editing and of the addition of new data. It is especially pleasing to note, through each successive edition, the progression toward liberal carbohydrates, simplification of diet calculations and of treatment in general.

It seems hardly necessary to repeat again what was said in reviews of previous editions: Joslin's book is one of the most authoritative texts in any field of medicine. It is truly the 'Bible' for all students of diabetes.

I. I. LEMANN, M. D.

Contributions to the Microscopic Anatomy of the Pancreas: By Paul Langerhans (Berlin, 1869). Reprint of the German original with an English Translation and an Introductory Essay by H. Morrison, M. D. Baltimore, The Johns Hopkins Press, 1937. pp. 39. Price \$1.00.

This little thirty-nine page brochure of Langerhans' brilliant thesis should be welcomed enthusiastically by all interested in source material. We have here not only the original article in German and an adequate translation, but also a facsimile of the original title page, photographs of Langerhans at various epochs, a list of his publications and a stimulating essay by Dr. Morrison on Langerhans' life and work.

I. I. LEMANN, M. D.

The Mind of Man: By Walter Bromberg, M. D. New York, Harper and Brothers, 1937. pp. 323. Price \$3.50.

In a sequential way the author sets forth the development of psychotherapy. He proceeds with discrimination to pick out therapeutic principles here and there from methods in vogue at different times in the history of civilized man. If taken only at their face value, some of these principles are ridiculous, but when considered in retrospect in the light of present-day psychology, they

are seen to have been definite therapeutic advances. He reveals what the magian, the medicine man, the shaman, the exorcist, the monk, the priest, the faith-healer, the mesmerist, the hypnotist and the physician have contributed to the treatment of psychiatric disorder.

Among the contemporary schools of psychotherapy, the concepts of Freud, Adler and Jung are well handled. But the small space given to Meyerian formulations affords opportunity for the reader to form misconceptions as to their chronological position, and their developmental and therapeutic importance.

The reduction of present-day psychoanalytical procedures to practical and time-saving methods for clinic patients is interesting, especially in view of Burrows' work with groups, correctly referred to as "phyloanalysis".

In recognizing social psychiatry, the author does full justice to a field worthy of serious thought and practical work. No doubt its future development will contribute a great deal towards overcoming superstition and ignorance, and make society conscious of its contribution to and responsibility in many psychiatric disorders.

The author has given both professional and lay readers an interesting and instructive book. It is highly recommended for the modern therapist.

T. A. WATERS, M. D.

Dietetics Simplified: By L. Jean Bogert, Ph. D., with a Laboratory Section by Mame T. Porter, M. A. New York, The Macmillan Co., 1937. pp. 637. Price \$3.00.

This interesting book is written in plain language which can be understood by persons with problems in diet, who have not a medical education. It presents in a clear, simple manner the essentials of dietary treatment, along with the reasons for using certain foods.

Sample diets are suggested along with complete directions for their preparation. From a medical standpoint, the section on therapy is well worth reading.

This book should be very helpful as a reference for both physician and hospital dieticians.

HENRY OGDEN, M. D.

The Development of Modern Medicine: By Richard H. Shryock. Philadelphia, University of Pennsylvania Press, 1936. pp. 442. Price \$4.00.

The publication of a book concerning things medical with an historical background such as the present volume possesses, not written by a medical man, is rather a novelty. Most medical histories have been construed and constructed by members of the profession themselves. Such histories for the most part have to do with the

individual physician and the result of the individual's contribution to medical science rather than the broader aspects of how present day medical practice developed as result of innumerable factors other than those that are solely medical. To write such a book would be an impossibility for a man who did not have a splendid historical grounding. It would seem, therefore, fitting that "the interpretation of the social and scientific factors involved" in the development of modern medicine should be handled by an historian. Shryock is Professor of History at Duke University and is eminently qualified to undertake what is undoubtedly a severe test of a man's broad knowledge. There can be no question as to the qualifications of the author, except possibly his cognizance of medicine, but a careful reading of the book resulted in finding extremely few errors so far as medical knowledge is concerned and showed the author has a surprisingly complete information concerning not only the broad aspects of medicine but also of many of the smaller details relating to the medical sciences.

The volume deals largely with trends and changes in medicine from the seventeenth century up to contemporary times. Shryock develops the thesis that from this early period until the present time medicine has waxed and waned in its influence on society as a whole and in its value to the individual. In the early days the physician was bound and hindered by inadequate training, by a lack of instruments of precision and by his dependence upon erroneous concepts and remarkably faulty theories. Then there gradually developed in the succeeding two hundred years a clearer concept of the modern science of medicine which advanced rapidly during the next fifty years, notably in the outstanding schools of Paris, beginning about 1800. There was then for some years a short slump in professional standards and accomplishments. The observations of scientists of the decades before were disregarded. The physician paid little attention to the social aspects of medicine. He became a polypharmacist prescribing nauseous mixtures on an empirical basis. This continued for thirty or forty years and then Pasteur, who had the happy faculty of being a great scientist who could interest the laity in medical sciences and who at the same time could be a leader in the medical world, revolutionized medicine. The schools of Germany attained a high scientific plane and gradually medicine became truly a science. As a result of these changes, which Shryock has sketched profoundly and deeply, the public has swung away from charlatans, quacks and practitioners of peculiar faiths, regained confidence in medicine and the medical man and nowadays, for the most part, has faith and trust in doctors and in their work. Shryock goes into considerable detail as to how

these changes took place. His account is stimulating and absorbing. Aside from the broad trends he develops, furthermore, the more detailed improvements, both scientific and sociologic, that have taken place in medicine in the last three hundred and fifty years. Child health, prenatal care, value of periodic health examination, the fight against mental diseases, the development of specialties, are all discussed in an enlightened and interesting vein. In the closing chapter he deals with some of the problems of the day, such as the cost of medical care, the control of venereal disease, the elimination of respiratory tract infections, the conquest of cancer, the lack of improvement in life expectancy in later age period; these are some of the problems which need solution in the future, the author writes.

A very brief resumé of the contents of this splendid volume has been presented to indicate the character of the work. It is undoubtedly authoritative, it is beautifully written and it is enthralling in its interest. The binding and format are excellent.

J. H. MUSSER, M. D.

Surgical Treatment: A Practical Treatise on the Therapy of Surgical Diseases: By James Peter Warbasse, M. D., F.A.C.S., and Calvin Mason Smyth, Jr., B. S., M. D., F.A.C.S. Philadelphia, W. B. Saunders Company, 1937. 3v. and index, 2486 illus. Price \$35.00.

This treatise on surgical therapy first appeared in 1918, as the work of the senior author alone, and the second edition, which was written with the aid of the Assistant Professor of Surgery in the University of Pennsylvania Graduate School of Medicine, represents, according to its preface, "no significant departure from the general plan of the original work." The aim of the book, according to the 1918 foreword, is "to render help in every surgical condition under all circumstances." That is a gigantic undertaking even for a work in three volumes and more than 2500 pages, particularly when "surgical conditions" are interpreted to include the specialties of gynecology, urology, ophthalmology and otolaryngology. Only obstetrics seems to have been omitted, although at that many of its complications are included. It is inevitable, under the circumstances, that the discussion of all conditions is sketchy and superficial.

The senior author stated in the preface to the first edition that his purpose was to outline for each condition its ideal treatment, although the circumstances surrounding both the patient and the surgeon might make that treatment impossible of application. For that reason, alternatives of treatment were presented, which might be employed if the best thing could not be done. The

next paragraph of that first preface suggests that these modifying circumstances are of two kinds, the surgeon's own inability to apply the so-called ideal treatment, plus the patient's inability,—presumably financial,—to demand it. The inescapable inference is that since the patient is likely to be treated according to the limitations of his medical attendant, provision is made from the outset for such "second-best" treatment. That is a state of affairs which is clearly anything but ideal.

Limitations of space, as we have said, make complete discussion of any subject impossible, and the method of therapy, and particularly the type of operation advised, is practically always, therefore, that preferred by the authors themselves. Their trend, it is true, is usually toward sound conservatism, but some curious and not altogether happy results follow. It seems odd, for instance, to find a composite operation (based on the union of fascia with fascia set down as the "ideal" operation for inguinal hernia, with Bassini's, Ferguson's and Halsted's operations dismissed in a sentence or two each. Again, the section devoted to toxic thyroid disease conveys no conception whatsoever of the risks inherent in the surgical treatment of that disease, and the same comment can fairly be made on the section devoted to intestinal obstruction.

The illustrations are excellent, and in the opinion of the reviewer are the best part of the book. This is frankly a work intended for the general practitioner, who has not the time, or, more accurately, the inclination, to use the larger systems or the special monographs. If it be considered only in that light, it has, perhaps, a field of usefulness. The practicing surgeon is not likely to find it helpful, nor are the practitioners of the various surgical specialties. In view of the enormous effort that went into the preparation of the book, and the proven abilities of the authors, it is to be hoped that when it is next revised its scope will be limited or its space increased; if that be done, many of the criticisms now fairly made against it immediately will be obviated.

FREDERICK FITZHERBERT BOYCE, M. D.

PUBLICATIONS RECEIVED

P. Blakiston's Son and Company, Inc., Philadelphia: *The Principles and Practice of Clinical Psychiatry* by Morris Braude, M. D. *Disorders of the Blood* by Lionel E. H. Whitby, C. V. O., M. C., M. A., M. D. (Cantab.), F. R. C. P. (Lond.), D. P. H., and C. J. C. Britton, M. D. (New Zealand), *American Red Cross First Aid Text-Book*, prepared by the American Red Cross for the instruction of First Aid Classes, revised.

F. A. Davis Company, Philadelphia: *Clinical Urinalysis and Its Interpretation* by Robert A.

Kilduffe, A. M., M. D., F. A. S. C. P. *Injection Treatment of Hernia* by Carl O. Rice, M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York: *Russian Medicine* by W. Horsley Gantt, M. D. *Pathology* by E. B. Krumbhaar, M. D.

The Johns Hopkins Press, Baltimore: *A Discourse upon the Institution of Medical Schools in America* by John Morgan. (Reprinted from the first edition, Philadelphia, 1765.) *A Brief Rule to Guide the Common-People of New England How to Order Themselves and Theirs in the Small Pocks, or Measels* by Thomas Thacher. (First published in 1677-8, reprinted in 1702 and 1721-22.) *Adaptation in Pathological Processes* by William H. Welch, M. D., LL. D. (Reprinted from *Transactions of the Congress of American Physicians and Surgeons*, 1897, vol. IV, pp. 284-310.)

Lea & Febiger, Philadelphia: *Clinical Parasitology* by Charles Franklin Craig, M. D., M. A., (Hon.), F. A. C. S., F. A. C. P., Col., U. S. Army (Retired), D. S. M., and Ernest Carroll Faust, M. A., Ph. D.

J. B. Lippincott Company, Philadelphia: *Treatment by Diet* by Clifford J. Barborka, B. S., M. S., M. D., D. Sc., F. A. C. P.

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Charles C. Thomas, Springfield: *Diseases of the Nervous System in Infancy, Childhood and Adolescence* by Frank R. Ford, M. D. *Practical Talks on Kidney Disease* by Edward Weiss, M. D.

The University of Chicago Press, Chicago: *The Cost of Adequate Medical Care* by Samuel Bradbury, M. D.

The Williams & Wilkins Company, Baltimore: *Tumors of the Nervous System*; Vol. XVI of a series of Research Publications by the Association for Research in Nervous and Mental Disease.

William Wood and Company, Baltimore: *Manual of the Diseases of the Eye* by Charles H. May, M. D., fifteenth edition, revised with the assistance of Charles A. Perera, M. D. *Aids to Physiology* by Henry Dryerre, Ph. D., M. R. C. S., L. R. C. P. (Lond.), F. R. S. E., second edition. *Anatomy and Physiology of Physical Training* by Major R. W. Galloway, D. S. O., M. B., Ch. B., R. A. M. C.

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EVOLUTION OF GYNECOLOGY*

W. D. PHILLIPS, M. D.†
NEW ORLEANS

Gynecology, defined as a study of diseases of woman, is, as its name implies, a broad subject and includes in its scope an extensive field of operation. It is only natural that a period of years will show many progressive steps in the development of this specialty.

HISTORY

When one glances backward, he must naturally envy his predecessors for the many opportunities which lay before them, and at the same time, must also experience a feeling of sympathy for the great difficulties under which they were working. We are all familiar with some of the early adventures of gynecology, such as the daring and spectacular operation of Ephraim McDowell of Danville, Kentucky, who, in 1809, performed what is reported to be the earliest successful removal of an ovarian cyst, in America, and earned for himself the title of "Father of Ovariectomy." It must have taken a large amount of courage on the part of both the surgeon and the patient to attempt a major operation in those days. I could not wish to describe in any better way this history-making operation, which has contributed so much to American surgery, than to quote from a recent address by our advisor and friend, Dr. Rudolph Matas, who said, "Though the disease for which the operation was performed only occurs in women, it necessitated the deliberate opening of the abdomen, up to that time regarded as a forbidden precinct of the

human body, which none dared enter without peril or impunity. But this successful performance in the case of Jane Todd Crawford, in defiance of traditional and well-founded years, was the first signal given to surgery that the prohibitive ban of the ages had been annulled, that the victims of this and other fatal abdominal diseases would benefit in the future, and thereby a new path in surgery had been blazed and made open to unknown and hitherto unthought of possibilities."

The operation was performed in a small farmhouse on Christmas Day, 1809, at which time a large ovarian tumor weighing over twenty-two and a half pounds was removed. It is said that five days later when Dr. McDowell came to see his patient, he found her up and about, making her bed. In three weeks she returned as she came, by horseback, over the 60 miles trail to her cabin home. Her heroism is no less great than his, and it is natural to see why only recently members of the Kentucky State Medical Society dedicated a monument to Jane Todd Crawford, who may be justly named the "Mother of Ovariectomy."

SOUTHERN GYNECOLOGIC PIONEERS

Speaking of gynecologic pioneers, upon investigation, one will readily find that the southern portion of the United States contributed in no small way to the development of our specialty as it exists today.

On January 25, 1813, there was born in Lancaster, South Carolina, a child who was destined to become one of the greatest surgeons of the world, James Marion Sims. His introduction of the silver wire suture, the Sims position, the Sims speculum, and a new catheter for bladder drainage made the operation of vesico-vaginal fistula what it is today. This

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was one of his outstanding achievements. It was during 1845 that he first encountered the condition of vesico-vaginal fistula and, in line with the opinion of the day, pronounced it incurable. In those days, the obstetric forceps were not in general use. Obstetric knowledge was not on the high plane of perfection that it is today. Very often the baby's head became impacted and compressed the bladder against the pelvic bones for hours, resulting in an interference of circulation in the tissues to such an extent that a vesico-vaginal fistula resulted. These cases were very common and were not considered at that time to be curable. It was almost by accident that Sims discovered the importance of the so-called Sims position for the proper examination and treatment of these cases. From a simple pewter tablespoon purchased from a hardware store, he conceived the idea of the Sims speculum which is in use today. His use of spiral spring wire, which developed his idea of silver wire for suturing material instead of silk, and the S shaped self-retaining catheter were the final points in the evolution of his successful treatment of vesico-vaginal fistula. He was also a pioneer in anterior wall surgery for cystocele and prolapse of uterus and numerous other notable achievements.

My remarks on this subject would fall far short of even approaching completion if I failed to mention our own pioneer, Ernest S. Lewis, former professor of gynecology and obstetrics, Tulane University of Louisiana. His record was an enviable one and his accomplishments many. Living as he did, in a period of development, his experiences were numerous. Many prominent gynecologists have developed from the experience received while working in the wards of our own Charity Hospital of the State of Louisiana, at New Orleans, and be they great or small, some portion of the teaching has originated directly or indirectly from our great leader, Ernest S. Lewis.

RECENT ADVANCES IN GYNECOLOGY

The discovery of anesthesia and the perfection of sterilization during the nineteenth century stimulated advancement in gynecology as it did in surgery in general, but little was

known regarding the finer points in gynecologic diagnosis or medical treatment. Almost everything done was in the operative field. Various types of operations were devised, and a high degree of perfection was obtained. It was not until the early part of the twentieth century that more thought was given to the improvement in methods of diagnosis and medical treatment. Present day conservatism was just beginning to be practiced. I well remember my earliest introduction into medicine. As students, we were taught some gynecologic diagnoses, very little, if any, medical gynecology, but we were permitted to witness a large number of spectacular gynecologic operations. I am frank to say my primary impressions of gynecology naturally were radical. Uterine cavities were curetted unmercifully and in a large number of cases fallopian tubes and ovaries were sacrificed, causing the onlooker to wonder if they really had a function at all. I am not making this statement in a form of criticism, since no one could question or deny the ability of gynecologists in those days. The point I wish to convey is that our specialty sult of this, conservatism in the history of of one of the greatest eras of advancement in diagnosis and medical treatment and, as a result of this, conservatism in the history of gynecology. Vesico-vaginal, recto-vaginal fistulas, and extensive perineal lacerations were most common at that time. Various splendid operations had been devised for the cure of these conditions, but the use of non-absorbable suturing material such as silver wire, silkworm gut and silk was responsible for a fair percentage of failures. Due to the ever increasing progress of obstetrics, vesico-vaginal and recto-vaginal fistulas are comparatively rare now. Then too, the successful immediate repair of perineal lacerations with absorbable suturing material has diminished considerably the need for extensive secondary repairs.

Probably one of the greatest progressive steps toward the successful practice of gynecology was the collaboration, one might say, between the gynecologist on the one hand and the pathologist, radiologist, and biochemist on the other. Various improved and accurate methods of laboratory diagnoses were accomplished. A more comprehensive knowledge of

the histology, pathology, and functions of the uterus, tubes, and ovaries was obtained by the gynecologist, and as a result a more conservative attitude toward these organs was developed with the one thought in mind, to do the greatest amount of good with the least amount of destruction or interference of normal function. I do not know of any condition in which this idea of conservatism is more amplified than in salpingitis. It was practiced in these cases long before it was in most other gynecologic patients, and I do not believe that in the comparatively recent past improvement in the treatment of these conditions has progressed materially. Of course, advanced laboratory technic has assisted in telling us when and on what type of cases to operate, but the "watchful waiting policy" is still our slogan. It has been many years since the gynecologist has been bold and ignorant enough to explore an inflamed pelvis and I am sure our idea of conservatism in this group of cases today has further taught us to leave such alone and at rest as long as it is humanly possible, with the reward of a complete cure in a large percentage of cases. When surgery does become necessary, it should naturally be radical because partial removal of diseased organs usually means subsequent operations.

UTERINE DISPLACEMENTS

Much could be said on this subject. One only has to read the average old edition of any gynecologic textbook and he will soon realize how important the gynecologists of the past regarded the question of uterine displacements. Fifty or more various types of uterine suspensions or fixations were devised. Many of them are obsolete now. We were told that displaced uteri could cause anything from headaches and backaches to sterility or abortions. I am quite convinced that it was not the newer types of suspension operations which were needed, but more correct methods of diagnosis. One or two of the many forms of uterine suspension operations would have been sufficient for the absolutely necessary operative displacement cases. Gynecologic progress has taught us that in a large percentage of cases the symptoms usually attributed to uterine displacements are in reality caused from other condi-

tions, namely, constipation, focal infection, sacro-iliac, or arthritic conditions. I am frank to say a large number of my so-called uterine displacement cases are cured by proper orthopedic measures. I do, however, admit that there are a few that need suspension, but these few should be carefully selected before subjecting them to unnecessary operative procedures. Pessaries are still of service, but mostly as a palliative measure. Modern obstetric care has diminished to a large degree the number of uterine displacements, as it is well known a fair number of them are of puerperal origin and, to quote the words of a prominent obstetrician, "The habit of lying on the back is the most unnatural posture to which the human race has become heir, through habit only. No other animal sleeps in such a position and certainly no other female would dream of abusing herself following labor. But our female almost invariably does, and the heavy soft uterus with the usual means of support, the pelvic floor newly stretched, weakened, even injured, has really no alternative but to gradually tumble back against the sacrum with a resultant uterine displacement."

LEUKORRHEA

One of the most annoying symptoms of a disease which many women suffer and seek relief from is leukorrhea. This condition, in the earlier days of gynecology, was the excuse for the much abused operation of curettage. As we all well know now, the results were disappointing because, in most instances, the uterine cavity was not the source of the trouble. Later our point of attack was the cervix uteri. Various kinds of mutilating operations were devised for cervical disease. After a while, we arrived at the conclusion that cervical cysts, erosions, and eversions which apparently do cause leukorrhea could be treated by better methods than extensive surgery. We are probably most indebted for our present day treatment of cervical conditions to Guy L. Hunner, of Baltimore, who, in 1906, described his method of cauterization of the cervix by deep radial incisions. Hunner's theory was that by using the actual cautery, as he did, in deep radial strokes, the cervical glands with surrounding inflammatory areas would be destroyed and

that enough healthy stroma would be left between the cautery strokes to insure against future stenosis and dystocia at labor. The paquelin cautery was first used, and, later, thermo cauteries. In my own work, I have found the cautery of great service in the treatment of cystic cervicitis, cervical eversion and erosions. Early postpartum use of the cautery is advised on the ground of prophylaxis, and the fact that the treatment is an office procedure carried out with no discomfort or inconvenience to the patient makes it more practical. I am frank to say that my percentage of extensive surgical repair of the cervix has diminished, in the past few years, to an almost negligible degree.

In spite of the progress in the treatment of cervical diseases, a certain percentage of persistent leukorrhea cases were not relieved. Various antiseptic douches were used with no avail, and even though the *Trichomonas vaginalis* had been described by Donn  as far back as 1836, it has only been in recent years that the disease, so easily diagnosed, has been properly treated with any number of the various preparations now suggested and, as a result, a large percentage of chronic leukorrhea cases have been cured. I can assure you that you will not find a more grateful patient than the woman who is cured of a persistent and annoying leukorrhea.

ROENTGEN RAY AND RADIUM AS AN AID TO GYNECOLOGY

The development of roentgen ray as a means of diagnosis and as a therapeutic agent, and the advent of radium, have contributed in no small way to the progress which the specialty of gynecology has attained. The question of gynecologic diagnosis was first considered. The growing conviction that there must be some dependable way of diagnosing obscure conditions within the female pelvis without having recourse to exploratory laparotomy led to exhaustive experimentation, with a view of finding such a measure. To Kelling, of Dresden, belongs the credit of having first suggested, in 1902, that conditions in the peritoneal cavity might be diagnosed by inflating the cavity with air or gas. In June, 1919, Steward and Stein introduced in America the combined method of diagnostic gas inflation of the peri-

toneum and roentgen transillumination of the abdominal cavity. Later, in 1919, Rubin conceived the idea of inflating the peritoneal cavity by insufflation through the fallopian tubes with a view to determine their patency or blockade. This was followed by various other methods and, finally, in 1924, the first use of lipiodol for uterosalpingography was reported, and, as a result, new avenues of gynecologic diagnosis were opened.

The roentgen ray has contributed in many other ways to diagnostic measures, such as in cases of ovarian cysts, dermoids, and certain forms of uterine fibroids. As a therapeutic measure, both roentgen ray and radium are most necessary in gynecologic armamentarium. Besides the employment of radium in uterine cancer, I do not know of any condition which responds more readily to its use than cases of functional uterine hemorrhage in women nearing the menopause, associated with, or without, hyperplasia of the endometrium and fibrosis of the uterus. These are the cases that years ago would have been subjected to curettage once, twice, or several times and, finally, in desperation, after all measures failed, hysterectomy would have been resorted to in a patient already weakened by prolonged uterine hemorrhage with the usual dangers associated with this type of operation. I strongly advocate diagnostic curettage in these cases as a preliminary to the radium treatment.

Of recent date, a great deal of interest has been manifested in the irradiation of the pituitary gland in the treatment of menopausal symptoms of patients who have not been benefited by the usual forms of medication. Recent reports, including several hundred cases so treated, show very gratifying results. This form of treatment is not new, but it is one that has been revised and made popular since there is now a better understanding of the relation of the pituitary gland and certain of the female organs, and also of the effect of irradiation therapy on these organs. C. G. Collins, E. Perry Thomas, and Leon J. Menville reported, at the Detroit meeting of the Radiological Society of North America, cases of 33 such patients wherein irradiation therapy was used. Only one patient, with surgical menopause of 13 years' duration, failed to im-

prove. Improvement is most often noticed during the third week of treatment. Complete relief is obtained three weeks after the last of the roentgen ray exposures.

TUMORS OF THE UTERUS

I feel we have made definite progress in the treatment of new growths of the uterus; particularly is this true in the benign group. In the early days of gynecology, these were treated more or less as a general class, large fibroids of the uterus being most common. Today, as a rule, we see the smaller type because the fear of operation does not exist as it did years ago, and patients seek relief sooner. With the perfection and cooperation of the pathologic laboratories, we have been able to study and classify fibroids of the uterus in a more intelligent manner, and, as a result, they are placed in certain groups and treated accordingly.

Group I. Subserous or Subperitoneal Myomas. Especially in young subjects, these are usually treated by myomectomy and, as a result, the functions of the uterus are maintained. Many cases of pregnancy and successful delivery are reported following myomectomy in young women. I recently had an opportunity of doing a moderately large myomectomy in a patient associated with pregnancy, and a few months afterwards delivered her of twins.

Group 2. Intramural or Interstitial Myomas. The tumors which occupy the muscular structure of the uterus may be treated by intra-uterine radium treatment and subsequent roentgen ray therapy or operative procedure. In the extensive growths, where the tumor is larger than a three months' pregnant uterus or in multiple growths, I prefer hysterectomy, a supra-vaginal or incomplete hysterectomy being, as a rule, the choice operation. The complete hysterectomy is done when the cervix uteri presents evidence of extensive scar or if there is evidence of malignant disease in either the cervix or body of the uterus. In the smaller single tumor of the uterus, occurring in an elderly woman, or in cases at or near the menopause, and when the tumor is no larger than a three months' pregnant uterus, radium may be used followed, if necessary, by roentgen

ray therapy. In these cases, a preliminary diagnostic curettage is always indicated.

Group 3. Submucous Tumors or Polyps. Most of these growths may be removed by the cervical route. If the polyp is pedunculated, removal with a cautery is usually done, followed by a thorough curettement of the uterine cavity, always keeping in mind that a small percentage of the growths are malignant.

Rather perplexing problems in gynecology are cases of degenerating myomas. These are the ones that are frequently referred to as "soft fibroids." They are interesting from the standpoint of diagnosis, frequently being confused with pregnancy. I well remember many cases in which, even after the abdomen had been opened, the soft symmetrical enlargement and congested appearance of the uterus made one hesitate for fear of removing a pregnant uterus. The Friedman modification of the Aschheim-Zondek and other pregnancy tests has, to a large measure, removed this difficulty by clarifying the diagnosis before operation—another advancement in modern gynecology.

MALIGNANT TUMORS OF THE UTERUS

The twentieth century sees the cancer problem still unsolved, but I am sure we must admit that marked progress has been made and the facts remain that cancer of the uterus is curable, as shown by statistics from clinics in this country and Europe, reporting 10 to 15 year cures of cancer of the uterus following the use of radium or surgery. We have passed through many years of changing treatment, from chemical pastes such as zinc chloride, and heat cauterization to the various forms of operative treatment, such as vaginal and abdominal hysterectomy including the so-called Wertheim radical operation.

Shortly after the discovery of roentgen rays by Roentgen, in 1895, and the discovery of radium a few years later by Madame Curie, an interest was manifested in the use of these agencies in the treatment of cancer. At first, the results were very unsatisfactory, due to the lack of knowledge regarding the use of them, but with improvement in technic and a better understanding of their biologic effect, more and more use was made, until, at the present

time, they are considered indispensable in the treatment of carcinoma of the cervix.

Radium, roentgen ray, and surgery seem to be a more or less universal form of treatment for uterine cancer now. The location, duration, extent of invasion, and type of disease are the determining factors. Although there is some difference of opinion concerning the treatment of carcinoma of the cervix, I think most of us agree that, in carcinoma of the body of the uterus, the most satisfactory form of treatment is surgery, which consists of complete hysterectomy and, in the majority of early cases, the results are good. Regarding the cervix cases, radium seems to be the choice treatment in the majority of patients. I think it is generally conceded that in carcinoma of the cervix about 97 per cent are of epidermoid or squamous cell variety and the remaining 3 per cent of the adenocarcinoma type. The majority of the former group should be treated by radium. The adenocarcinoma type, if early, and if the patient is a good risk, should be treated by extensive hysterectomy. In advanced cases, radium with roentgen ray may be used. Roentgen ray seems valuable in those patients who have pain due to pelvic disease.

EXPERIENCES ELSEWHERE

Interesting reports are available in the medical literature regarding the use of roentgen rays and radium by physicians in this and other countries. While there may be a slight difference in the technic of application of both roentgen rays and radium, the results are strikingly similar. For instance, Heyman of Stockholm, Sweden, in the treatment of carcinoma of the cervix, uses a total amount of 6,880 milligram hours of radium and, after the application of the radium, he uses deep roentgen ray therapy. He reports 22.4 per cent of such cases are well five years after irradiation therapy. Now, Healy, of the Memorial Hospital, New York City, uses a total of 5,000 milligram hours, followed by roentgen ray therapy. He reports 1,574 cases so treated, 22 per cent of which were well five years after irradiation therapy. Kaplan, of Bellevue Hospital, New York City, uses 6,500 milligram hours, followed by roentgen ray therapy, obtaining practically the same result as Heyman.

Schmitz of Loyola University of Chicago, uses 4,800 milligram hours, followed by roentgen ray therapy, with the report that 28 per cent of the cases treated had good results five years after the use of irradiation therapy. Bowing, of the Mayo Clinic, of Rochester, Minn., uses 5,400 milligram hours, followed by roentgen ray therapy, with 75 per cent of the early cases well after five years, 63 per cent of the intermediate, and 21 per cent of the advanced cases. Regaud, of Paris, of the Curie Institute, reports 317 cases treated by irradiation therapy, with 33 per cent well after five years. Burnam, of Johns Hopkins, Baltimore, reports 349 cases, with 20 per cent well after five years. Barnes Hospital, St. Louis, reports 121 cases, with 23 per cent well after five years. Crossen, from St. Louis, reports 21 per cent of his cases well after five years.

It is of interest to note that the favorable reports being obtained at the present time at the larger medical centers of this and other countries are very similar, and it is also interesting to observe the similarity in technic, which may explain the favorable results obtained. It is to be appreciated, of course, that this form of treatment as reported here is not to be thought an empirical one, but that each and every case is an individual and should be treated accordingly. The statistical report herein presented merely shows an average of a group of patients treated by these individuals.

PREVENTION OF CANCER

The prophylaxis of cancer of the uterus still remains an all important question today. If we will continue to educate the women of this country to the very important significance of abnormal white or bloody vaginal discharges, irregular or prolonged menstrual bleeding, a return of menstrual bleeding after the supposed menopause and, at the same time, examine carefully all patients complaining of an irregularity, treating post-delivery and other cervical erosions or scars, and resorting to diagnostic curettage or biopsy in all suspicious cases, I am sure our percentage of uterine cancer cases will be diminished. Those presenting themselves for treatment will be seen earlier and, as a result, the number of cures will be increased. Just what the future will de-

vise for the further treatment of cancer remains to be seen. Probably, subsequent investigations and discoveries in endocrinology and organotherapy will throw more light on the subject. Much progress has been accomplished in the past few years concerning our knowledge of female endocrinology and, as a result of this, organotherapy has been placed on a more or less scientific basis. In the earlier use of various glandular extracts, cases were treated empirically, to a greater or lesser extent, believing that most ovarian extracts were "cure alls." This was soon found not to be true. Later, the isolation of the various hormones led to the production of the numerous commercial products on the market today, and the careful analysis of the particular secretion, which is deficient in the individual patient, with the replacement, so to speak, of one of the commercial products containing as near as possible the hormone which is deficient, will often give the results desired. In my own experience, I have noticed good results in functional uterine bleeding in young individuals. It is fairly well conceded that the ovarian dysfunction in these cases consists of a failure of ovulation with abnormal persistence of estrin stimulation and absence of progesterone effect due to the fact that corpora lutea are not formed. The use of various preparations containing lutenizing hormones is of service. In vasomotor menopausal disturbances, it is thought that the withdrawal of estrin is an important factor in causing the climacteric symptoms and the administration of one of the various estrogenic preparations such as theelin will lessen the discomfort.

CONCLUSION

Permit me to say that I well realize my inability to discuss, at this time, anything more than an abstract of some of the many steps in the development of gynecology. I am sure, however, we must all admit that the progress has been most noticeable. The past was clouded with difficulties, the future seems very encouraging.

DISCUSSION

Dr. Courtland P. Gray (Monroe): The evolution of gynecology has not taken place by just chance nor just happened so, but has been due to such men as mentioned by Dr. Phillips.

To the early pioneering work of Marion Sims and Ephraim McDowell, gynecology today owes much. The literature pertaining to the work of both these men is most interesting. I would suggest, especially to the younger men, to read and study the life of Marion Sims. Equally as interesting is Haggard's tribute to Ephraim McDowell, "The Surgeon of the Wilderness." This is indeed a classic.

The tribute paid by Dr. Phillips to the late Dr. Ernest Lewis is most commendable. The teaching of Dr. Lewis has contributed greatly to the "Evolution of Gynecology", not only in Louisiana but in the entire South.

Another illustration of the progress made in the field of gynecology is to be found in the present routine office treatment for the various vaginal discharges and the so-called endocervicitis. It has not been many years since the use of the old ichthyol vaginal tempon was the routine procedure in all these cases. Today the proper diagnosis of these conditions has altogether changed the plan of treatment.

I thoroughly agree with Dr. Phillips that endocrinology has changed the entire viewpoint in many gynecologic cases. Even now we do not know just where endocrinology will finally lead us, but we do know it has cleared up many gynecologic problems which were not understandable a few years ago.

Dr. Phillips mentioned uterine displacements. As an illustration of the advancement and evolution in gynecology, permit me to mention what we were taught in my student days as some of the most prominent symptoms of uterine displacement. We were told that pain on top of a woman's head signified a backward uterine displacement. Many of the ills of womankind were attributed to uterine displacement. There was not so much stress put on the old lacerated perineum, which was probably the cause of what displacement there might have been.

Then too, I recall that deadly instrument the curette. What a weapon to place in the hand of a young graduate in medicine. Today we leave this for the exceptional case and dare not invade the uterine cavity because the woman is flowing too freely as a result of some endocrine dysfunction. We almost tremble when we look back at the long line of nervous women, who have been made so as a result of premature and indiscriminate surgery which had little respect for the ovaries and tubes.

I believe that the paper just presented by Dr. Phillips is one of the most important that will be presented at this meeting. It will do us all good if we will read and study this paper by Dr. Phillips after it is published in our official journal.

All in all, I believe that the sum total of evolution in gynecology may be given in a few words: Diagnosis, endocrinology, and conservatism. Careful consideration of these three factors will lead us far.

Dr. T. B. Sellers (New Orleans): I agree with everything Dr. Phillips has said and my remarks will be confined to elaborating on a few points which time did not permit him to dwell upon.

It cannot be emphasized too strongly that pelvic inflammatory disease should be classified and treated medically in order that later surgery may be as conservative as possible. The patient should be given detailed instructions as to what constitutes adequate rest; it is important that she also be under the constant care of the gynecologist during this period. Heat applied to the vault of the vagina by means of the Elliott treatment regulator, supplemented by injections of sterile milk every third or fourth day, is of definite value in a large percentage of these cases.

Retrodisplacements of the uterus should be adequately treated and corrected as early as possible. The pessary has a three-fold value: first, its early use for retroversion following miscarriage or delivery corrects from seventy-five to eighty per cent of these cases; second, it is an excellent diagnostic agent in backache with retroversion as the simple procedure of replacing the uterus and applying a properly fitting pessary will often clarify the diagnosis; third, it is of value in poor surgical risks either temporarily or as a permanent measure in retroversion and procidentia. If it is necessary to resort to surgery in the treatment of retroversion, major attention should be given to the existing pathology. The pelvic floor should be repaired anatomically and the uterosacral and broad ligaments shortened; in extreme cases of retroversion with procidentia, the method of Curtis is of value, namely, advancing the bladder fold on the anterior wall of the uterus.

Endocervicitis is a common cause of certain types of leukorrhea though by no means the only one. Particular attention should be given to the adequate treatment of endocervicitis. Erosion or eversion is usually a superficial involvement of the external os only, due either to chemical irritation or to some form of injury to the cervix; in endocervicitis, most of the glands in the cervix are involved, with the infection extending up to the internal os. Complete eradication of the infected glands is essential. For this purpose we have found the electrosurgical unit the most desirable agent; if it is not available, the cautery method is the next procedure of choice. Complete eradication not only removes a focus of infection, but also constitutes definite prophylaxis against the later development of carcinoma of the cervix.

In a small group of badly involved cervices, it

is necessary to resort to the Sturmdorf amputation.

In all cases in which there is any question as to the presence of carcinoma, a biopsy should be taken before cauterization or conization of the cervix. Much damage can be done through opening up the lymphatics and permitting an existing cancer to be disseminated. Early biopsy also eliminates possible loss of time in giving adequate treatment promptly, should carcinoma prove to be present.

Isolation of the several hormones has marked a definite advance in gynecology. As a diagnostic agent, the Aschheim-Zondek test is of great value in the determination of early pregnancy and of the presence of certain pathological lesions, such as hydatiform mole, chorio-epithelioma and teratoma. Therapeutically, the follicular hormone, theelin, has proved to be of value in treating menopausal symptoms and antuitrin-S has been used advantageously in metrorrhagia.

A word of warning against the indiscriminate use of roentgen ray and radium: As valuable as these agents are in menopausal bleeding, fibroids and cancer when indicated, much harm has been done by the inexperienced man using them indiscriminately.

Dr. C. H. Mosely (Monroe): I want to talk rather briefly about radium and call attention to the neglect of surgery.

It takes 30 minutes to do a vaginal hysterectomy. We used to hear Dr. Frank Smythe say that in the hands of a competent surgeon the mortality is practically nil, in the hands of a tinker the mortality is 100 per cent. That holds true. I cannot remember of ever having had any trouble with vaginal hysterectomy. We do it on these old ladies in about 20 or 30 minutes; do it with the clamp method. I believe ether is the safest anesthetic. I have never seen anybody have any trouble with it. It should be given by the drip method, and not one patient in 10 to whom I have given this anesthetic suffers from vomiting.

What we want to do is to rehabilitate these old people and get them well without submitting them to an intra-abdominal operation, and I have had a 100 per cent cure.

Dr. Leon J. Menville (New Orleans): The orderly manner in which Dr. Phillips arranged his talk is striking, because doctors, as a rule, are so occupied with their numerous responsibilities in the practice of medicine that they often do not have the inclination nor the time to arrange their manuscripts in a manner which will give an editor the least amount of trouble.

Dr. Phillips has wisely stressed the importance of consultations between the radiologists, pathologists, and gynecologists. In this manner, infor-

mation may be obtained which will be of great value to the gynecologic patient. In regard to the use of radiation therapy to the pituitary gland in women at or near the menopause who have failed to respond to the usual form of medication, it is a form of treatment which is now being generally employed for such conditions. It has been my privilege, in collaboration with Dr. Conrad Collins and Dr. Perry Thomas at the Tulane Clinic, to have treated a large number of such patients. We have at different times published the reports of the good results obtained by this form of treatment. I quite agree that radium is used in instances too empirically by inexperienced physicians, but in the hands of the experienced radiologist, I know of no argument against its use.

PELVIC CONDITIONS SIMULATING APPENDICITIS*

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The well known dictum "appendicitis against the field" has been extensively used, but not always judiciously. It should not be applied until reasonable effort has been expended in an attempt to establish an accurate diagnosis. Ardent adherents of this dogmatic saying gradually accumulate an increasing number of instances in which appendectomy has been performed without relief of symptoms. A list of these diagnostic errors would include a wide variety of conditions whose cause may be systemic, for example, measles and scarlet fever; cardio-respiratory, for example, pneumonia, pleurisy or coronary occlusion; upper abdominal, for example, cholecystitis or perforated duodenal ulcer; local, for example, ileo-cecal tuberculosis, typhoid or ureteritis and finally, pelvic lesions.

A number of pelvic lesions which have been confused with appendicitis will be enumerated and briefly considered. Only the salient features will be mentioned. Attention will be directed to the possible sources of error of omission rather than a lengthy differential diagnosis.

GONORRHEAL INFECTIONS

Gonorrheal infection undoubtedly takes first rank. Tracing the course of a typical case, the

first manifestation of the disease is at the level of the glands of the urethra and vaginal introitus. The infection progresses upward through the vagina to the cervix, where it may assume an extended residence. The involvement of the endometrium is transitory while the uterine tubes are very susceptible to the infection. Before the fimbriated ends of the tubes are closed, infected material escapes into the pelvic cavity and spreads to the adjacent pelvic organs, particularly the peritoneum. Thence it may spread upwards along the flanks as far as the diaphragm. Special attention may be directed to the involvement of the peritoneum at or near the level of the appendix. If a patient is seen for the first time when the peritoneum near the appendix is involved, the diagnosis may be exceedingly difficult, particularly when the preceding lesions have been mild and transitory. Associated nausea, vomiting, constipation, fever, leukocytosis, localized pain and tenderness may closely simulate appendicitis. In such an instance, the preceding history bears the utmost importance. This may be suppressed by the patient wilfully or inadvertently. Repeated observations of the complete progress of the infection from its onset in Skene's glands, thence upwards along the reproductive tract and along the peritoneum, provides a sound basis for the interpretation of the lesions localized near the appendix. When the tubes are closed early and the infection confined to the reproductive tract, the diagnosis is usually not difficult. There is one exception, however, in an acute exacerbation of a latent tubo-ovarian infection persisting long after the symptoms in the lower tract have disappeared and are possibly forgotten.

UNRUPTURED ECTOPIC PREGNANCY

Unruptured ectopic pregnancy may be exceedingly difficult to diagnose. When rupture occurs and blood escapes into the pelvic cavity, the diagnostic problem is simpler, although the treatment may be more difficult. Shock and other signs of sudden hemorrhage are not likely to be mistaken for appendicitis. Tubal abortion presents less conspicuous symptoms. At times, the symptoms are so insignificant that the woman does not even consult a physician. Knowledge that the event has occurred is first gained when the disintegrating products of con-

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

ception are accidentally discovered at operation. Many pass unnoticed and are not recorded. Repeated small hemorrhages from the tubes, however, may give rise to recurring attacks of pain which strongly suggest appendicitis. The peritoneum in the region of the appendix is irritated, pain and tenderness below McBurney's point are noted. Slight pain and leukocytosis may occur and digestive disturbances are the rule. An accurate history will usually show some recent menstrual irregularity accompanied by the passage of a small amount of blood from the vagina. A pelvic puncture may demonstrate the presence of blood in the cul-de-sac. Accurate location of the pain and tenderness places the maximum below McBurney's point.

ENDOMETRIOSIS

Endometriosis is a general term which signifies the aberrant growth of tissue like the endometrium. The structures involved are largely confined to the pelvic cavity. Other locations are not important in relation to appendicitis. Many of the lesions are silent and symptomless, being discovered accidentally at operation. Although endometriosis of the appendix and cecum occasionally occurs, I have never seen such lesions associated with symptoms that suggested appendicitis. Endometriosis of the right ovary or tube and peritoneum near the appendix has been diagnosed as appendicitis. The aberrant endometrial tissue responds to the cyclic stimuli of the ovarian hormones resulting in alternating periods of growth and regression, just as does the normal endometrium. Some of the lesions are characterized by endometrial lined cysts which periodically bleed into the cavity of the cyst. The resulting distension may affect the sensitive parietal peritoneum causing localized pain and tenderness. Furthermore, the bleeding is not always confined to the cysts, but breaks forth, spreading to the surrounding peritoneum which it irritates, thereby producing pain and tenderness. Fever and leukocytosis are usually absent. Digestive disturbances, if present, are not characteristic. The predominantly confusing symptom is the localized pain and tenderness. The cyclic nature of these is conspicuous, and is an important diagnostic point. Furthermore, careful location of the bowel, appendix, cecum or sigmoid are not associated with pain, because only the

visceral peritoneum is involved which is not highly sensitive. Even extensive lesions when confined to the visceral peritoneum do not give rise to pain or tenderness.

MISCELLANEOUS DISORDERS

Torsion of the ovary, tubes, ovarian or par-ovarian cysts or solid tumor has been mistaken for appendicitis. Epigastric distress, nausea, vomiting, constipation, fever, leukocytosis, localized pain and tenderness may closely simulate the symptoms attributed to appendicitis. The onset is insidious; the progress is gradual; the symptoms are only moderately severe but are persistent without regression. The history is usually not enlightening. The distinguishing features are the gradual onset and the localization of pain and tenderness. The area of pain and tenderness may be extensive, but careful examination will fix the maximum below McBurney's point. Either condition requires operation, and therefore there is no need to wait if in doubt.

A physiologic condition which was demonstrated to me as a medical student may be mentioned. Certain thin individuals, and those with relaxed abdominal walls, present a normal tenderness when the abdomen is palpated over the iliac blood vessels. When this tenderness is elicited only at McBurney's point, it has been mistaken for a tender appendix. Correct interpretation may be obtained by comparison with the reaction to palpation over the blood vessels on the left side of the abdomen.

URETERAL STRICTURE

Stricture of the ureter, especially when associated with pyelitis and ureteritis, may cause pain and tenderness at McBurney's point. Although all clinicians are not willing to accept stricture of the ureter as an entity, the demonstration of an obstruction to the passage of a catheter and relief of symptoms following dilatation are impressive, if not conclusive. In addition to the pain and tenderness, all the other symptoms characteristic of appendicitis may be present. Careful history may elicit other symptoms referable to the urinary tract. When an inflamed appendix lies directly over the ureter and the inflammatory process extends to the ureter, the differential diagnosis may be difficult. It is usually the so-called chronic appen-

ditis which must be distinguished from ureteral stricture. One patient, on whom I assisted at her twenty-sixth operation 25 years ago, has not ceased to impress me. On an erroneous diagnosis, a normal appendix had been removed. Subsequently she had adhesions, intestinal obstruction and hernia. She had wandered from doctor to doctor. Operation followed operation, but her original symptoms persisted until finally her right ureter was dilated. The possibility of a ureteral stricture should be borne in mind, and if there is the slightest doubt, a ureteral catheter will clear the diagnosis.

PERITONEAL CARCINOMA

An unusual condition which could not be diagnosed before operation may be mentioned in passing. In two patients, persistent pain and tenderness in the region of the appendix was not accompanied by any other symptoms. At an exploratory operation a squamous cell carcinoma involving the peritoneum of the pelvic wall was the apparent origin of the symptoms. Careful exploration of the abdominal and pelvic cavity failed to reveal any other new growth, therefore, the carcinoma originating in the peritoneum was the obvious cause of the symptoms. The lesion was too extensive in each instance to permit complete removal. Autopsy on one of these patients showed no other squamous cell neoplasm in any part of the body. None of the preoperative findings were sufficiently characteristic to justify the diagnosis of carcinoma.

RUPTURE OF GRAAFIAN FOLLICLE

One simple condition of the ovaries has so frequently been mistaken for appendicitis that it demands particular attention, namely, rupture of the Graafian follicle. It is now generally accepted that ovulation or rupture of a follicle occurs approximately midway between menstruations. An average mature follicle measures 1 cm. in diameter and it contains considerable free fluid which escapes into the pelvic cavity at the time the ovum is extruded. Ordinarily the rupture point is plugged, and seals itself within a few hours. Occasionally, however, the seal breaks and blood escapes which irritates the pelvic peritoneum, giving rise to characteristic pain and tenderness. At times, the normal follicular fluid, not accompanied by any blood is sufficiently irritating to call the host's attention

to the procedure, and the individual is aware of ovulation pain. Many records have been kept over a period of months. One patient furnished me with an accurate record of ovulation for two years. She was so thin that palpation of the ovaries was easy. Her statement that ovulation had occurred in the right or left ovary was readily confirmed by pelvic examination, when the ovary on the side corresponding to her pain was found to be enlarged, and the peritoneum was tender. The pain which lasted only a few minutes, was characterized as sharp but not cramp-like.

Following ovulation the corpus luteum develops and reaches maturity shortly before menstruation. During the latter days of development, hemorrhage may occur in the corpus luteum and occasionally breaks through the surface to the peritoneal cavity. This event is likewise accompanied by pain similar to ovulation pain. Tenderness, elevation of temperature and slight leukocytosis are associated with the pain. Serious hemorrhage may occur at this time. More than 100 such instances are now recorded in the literature. The symptoms, however, are characteristic of serious hemorrhage, and need not be confused with the mild symptoms of slight hemorrhage, nor is appendicitis simulated.

The symptoms of rupture of a follicle and mild hemorrhage from a corpus luteum are nearly identical, differing only in the time of the menstrual cycle at which they occur. The condition appears most frequently in young women. The onset is sudden. The temperature seldom rises above 100°F. The leukocyte count seldom exceeds 10,000 or 12,000. Pain and tenderness are referred to the lower quadrants of the abdomen. This may be followed, but not preceded by pain or tenderness in the upper abdomen. There may be anorexia, nausea and occasionally vomiting. Bimanual pelvic examination fixes the point of maximal tenderness near McBurney's point.

DIFFERENTIAL DIAGNOSIS

To differentiate the ovarian syndrome from appendicitis, it is essential to distinguish between the acute inflammatory and obstructive appendicitis. The onset of pain in acute obstructive appendicitis is usually sudden. It is usually first located in the umbilical or epigas-

tric region. Vomiting is a prominent and early symptom. The pain is usually intense for a considerable period which may be followed by a free interval. Rigidity and tenderness usually appear early. In general, the symptoms are milder than in the obstructive type.

The differentiation of the symptoms of obstructive appendicitis from irritating fluid coming from the follicle or corpus luteum is urgent on account of the rapid progress of appendicitis. The suddenness of onset is characteristic of both conditions, but with appendicitis the vomiting is more pronounced, the pain is more intense, the temperature is more elevated and the leukocytosis is greater. Observation for one or two hours will usually suffice to establish the trend. The inflammatory type cannot be distinguished so readily, because the onset is more insidious and the progress slower. For this reason, however, it is safe to observe the inflammatory type longer before the final decision is made.

The most important differential aid in diagnosis is the localization of maximal pain and tenderness. In appendicitis, it is usually located at McBurney's point, while ovarian pain and tenderness is below that point. Bimanual examination helps to fix the localization. The patient will often actually localize the lesion correctly, if asked to point with only one finger. This can be confirmed by the examiner, likewise searching with one finger for maximal tenderness.

Many patients have had a normal appendix removed, the operator reporting bloody fluid in the pelvis and the presence of a corpus luteum in the ovary. In subsequent cycles similar symptoms recur. In not a few instances, a patient has presented herself after appendectomy because she feels the same pain she had before the operation. History and examination indicate that the source is in the ovary. It is serious to overlook acute appendicitis. When in doubt, operation should be advised. No harm, however, can come from a brief period of observation to establish the trend. The more fulminating the symptoms, the quicker the diagnosis can be made. The milder the symptoms, the less will be the danger in waiting for a diagnosis. The treatment indicated for rupture of follicle, or slight hemorrhage from a corpus luteum, is rest and observation. If the possi-

bility of this condition is borne in mind, a diagnosis will often be made with assurance, and many patients will be spared a needless operation.

EMOTIONAL FACTORS

The emotions are an important part of life. They are difficult to define. Their limits and interrelations are often vague. Scientific study of emotions and bodily changes that are associated with various emotional experiences mark a new era in medicine. Many symptoms of disease can be controlled by way of the emotions. The field is vast. It belongs to no one specialty, but offers a challenge to every physician. Psychic and emotional states are capable of producing a wide variety of physical symptoms. Fear may be selected as the most common emotional disturbance, causing symptoms which are most difficult to distinguish from appendicitis or pelvic disorder. Among these causes may be mentioned fear of pregnancy, cancer, appendicitis or other disease. Recently, a girl of 15 came to the office complaining of pain in the right lower quadrant associated with dysmenorrhea, nausea, vomiting and fever. On two previous occasions, she had similar symptoms which had led to a diagnosis of appendicitis. On careful inquiry, it was found that these attacks occurred at examination time. Formerly she had been an excellent student. During the past year, her grades were poor. Consequently, she and her family were worried. A thorough physical examination revealed no conspicuous defects, except an error of refraction. Her position in the school room emphasized the visual defect, thereby increasing the eye strain and unconsciously she missed important parts of demonstrations by the teacher. She was fitted with glasses by the ophthalmologist. When she returned to school, her whole attitude changed; her appetite improved, the physical discomforts were relieved and she returned to her former high standard of scholarship. Another somewhat similar experience came to a girl of 13, who had developed prematurely. Her breasts were large and prominent. Other children remarked unkindly about her appearance until she became so sensitive that she manufactured an excuse to stay away from school. The excuse was physical symptoms similar to the previous case. Her treat-

ment consisted solely of assurance that she was a normal individual.

SUMMARY

An attempt has been made to bring before you some of the conditions which have been mistaken for appendicitis. The enumeration may suggest possibilities to be considered, but a complete guide for differential diagnosis is not assumed, and could not be compressed into this short space.

DISCUSSION

Dr. Lucien A. Ledoux (New Orleans): I am sure you all feel as I do, that we have been privileged to hear this most interesting paper by Dr. Pratt. This comprehensive review encourages me to voice an opinion which I have often expressed in private, namely, that in cases of suspected appendicitis after puberty, whenever possible a consultation should be held with a gynecologist in all cases of borderline diagnosis. I feel that a critical study of many cases which have been operated on for appendicitis and have subsequently undergone another operation for the relief of the original disability will reveal that some unrecognized pelvic pathology had been the underlying factor from the beginning.

The facts, submitted by Dr. Pratt, should also serve to emphasize the value and necessity of a good and complete history; this will prove a great aid and point the way in a large percentage of our cases. A thorough physical examination, too often incompletely or hastily done, is necessary for a good working diagnosis.

I would like to add to the list just given to you, three other conditions which I consider quite common because I have frequently had to consider them. One is the acute pain above or to the right of the bladder complained of in cases of developing acute cystitis, long before the symptoms of pressure, frequency and burning are complained of and positive urinary findings recorded. Another is the acute pain sometimes noted in patients developing an acute intestinal toxemia at or about the time that the menstrual period is due. This pain is due to the effect of the toxemia upon the ovary and frequently suspension of the expected menstrual flow is noted. A third situation is the acute pain caused by involvement of the superficial inguinal or deep pelvic glands in the early development of a vulvitis, bartholinitis and cervicitis or other lesions of the external genitals.

That this picture can be confusing at times is evidenced by a case that I would like to present in abstract: A female, 14 years of age, was seen one evening complaining of generalized abdominal pain

but she did not appear acutely ill. No diagnosis was made at that time, though she appeared to be suffering from an intestinal disturbance due to some food indiscretion. As she gave a history of a previous attack of pyelitis, the urine was examined the next morning and it contained 4+ pus. She had no symptoms of cystitis and no pain in the region of the kidneys. The next afternoon, she began to complain of burning and frequency and that night she had hematuria. With treatment, the acute phase immediately subsided and the next day I almost felt apologetic for visiting the patient, as she felt and looked so well. About three o'clock in the morning, the nurse on duty called me saying that the patient was complaining of a good deal of pain over the entire abdomen, had had a chill with a rise in temperature and considerable abdominal distension. I saw her about an hour later, she was considerably distended with rigidity and in profound shock. I immediately sent her to the hospital and after several hours succeeded in overcoming her shock to permit an exploratory operation, which revealed a gangrenous appendix; the cecum was in the pelvis and the appendix was attached by fibrinous exudate to the upper right border of the bladder. After a rather stormy convalescence, the patient made a complete recovery but the case made an impression on me that I will carry as long as I continue to practice medicine.

Now in regard to the question of operation in such cases. Of course, we feel that when there is a sufficient element of doubt and after careful study and the weighing of all the evidence, the patient should be given the benefit of the doubt and an exploratory operation performed, and I feel that we are all in agreement that the McBurney incision has no place in an exploratory operation on the female.

The paper so ably presented by the essayist has proved most interesting and I feel honored in being given the privilege of opening the discussion.

Dr. E. L. King (New Orleans): There are two points I wish to emphasize, regarding matters coming under my personal observation. One Dr. Pratt mentioned, and that is the adolescent with ovarian cyst. In my interne days, I saw that, three times in very young girls, 10, 11, 12 years of age; in each case a diagnosis of appendicitis had been made. A perfectly justifiable error, but worth mentioning. An occurrence that interested me, was the case of a prominent surgeon in New Orleans, who told me this incident concerning himself. A diagnosis of appendicitis had almost been made by himself and one of his assistants, and he happened to mention the case to Colonel Craig, of the Department of Tropical Medicine of Tulane University. Colonel Craig suggested it might be amebiasis, which

rather amazed this physician, but Colonel Craig kept worrying about getting the feces examined before taking the appendix out, and so he submitted a specimen to Colonel Craig and it was full of ameba. The patient was treated for amebiasis and still has his appendix. I might add this to the category listed by Dr. Pratt, especially since 10 per cent of the population of the United States has amebiasis.

Dr. O. C. Rigby (Shreveport): I would like to mention that in the central portion of Louisiana and Mississippi, we occasionally find an appendix infected with hookworm. I have never seen such a patient with an acute attack of appendicitis, but they are usually bothered with intestinal disturbances. After they have been given the treatment for hookworm, we find that they are not free from the disease some months later. It is often that these attacks simulate pelvic disease and, of course, will not be well of the hookworm infection until the appendix has been removed.

Dr. P. Graffagnino (New Orleans): I certainly enjoyed Dr. Pratt's paper, which was a most unusual presentation of this timely subject. There is only one point I wish to mention.

Dr. Pratt called attention to the value of bimanual examination in the differential diagnosis between appendicitis and salpingitis and its value cannot be underestimated. However, it has recently come to my attention that a great number of young children, ranging from 10 to 14 years of age, are submitted to a vaginal examination, in order to make this diagnosis. I do not know of any procedure more valueless and unnecessary than in these individuals. A rectal examination will give all the desired information, and whoever has been encouraging vaginal examination in these cases has done the children great injustice. No one is justified in doing a vaginal examination on a child of that age without an anesthetic.

Dr. Jean Paul Pratt (In conclusion): I wish to express my appreciation for these additions. May I ask Dr. King about one unusual situation occurring recently. One of my colleagues had a patient with symptoms somewhat like appendicitis; she was operated upon. He found a normal appendix and she recovered. He had another case the next week but did not operate; she had a ruptured appendix and died. Within the month, he had a third case, which was operated and the appendix found to be normal.

THE VALUE AND USE OF DIURETICS IN EDEMA, WITH SPECIAL REFERENCE TO THE MERCURIAL DIURETICS*

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Owing to limitation of time this discussion upon the value and use of diuretics in edema will be limited to the mercurial group. No attempt will be made to consider the voluminous literature upon this subject, but simply to describe my experiences and present a few illustrative cases.

Although much knowledge has been gained in recent years, there is still some conflict of opinion concerning the mode of action of many diuretics. Obviously, the main function of a diuretic drug is to increase the volume of urine. Furthermore, this naturally presupposes a certain amount of functioning renal tissue and fair circulatory integrity. It would be absurd to expect a diuretic to be effective in an acute nephritis, or in the case of a heavy metal poisoning. Most diuretics act upon the kidney in one of two ways, by increasing the glomerular filtrate (xanthine bases), or by diminishing the reabsorption of water in the tubules (the mercurials). There are probably extrarenal factors involved but these are not definitely known.

THE IMPORTANT MERCURIAL DIURETICS

The three mercurial diuretics to be considered are as follows:

1. Novasurol, merbaphen, 33 to 34 per cent of mercury U. S. P.

2. Salyrgan, mersalyl, 39.6 per cent of mercury. Salyrgan suppository, 0.4 gm. of mercury.

3. Mercupurin, 39.2 per cent of mercury, representing 3.5 per cent of bound theophylline to which is added 1.5 per cent free theophylline. Mercurin suppository, 0.5 gm., equivalent to about 0.2 gm. mercury, or approximately two and a half times the amount of mercury contained in the 2 c. c. ampule. Mercurin contains no purin.

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

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In order to demonstrate the action and modes of administration of these diuretics, cases of cardiac edema and ascites due to various causes were selected. In the cardiac cases, diuretics were employed only when digitalis and rest failed to eliminate the edema. It should be emphasized that thorough digitalization will in most instances free these patients of edema by increasing the volume of urine through improvement of the blood flow in the kidney, thus increasing the glomerular filtrate. This action may fail, however, after several attacks of congestive heart failure, and then diuretics are clearly indicated.

CASE REPORTS

Case 1. J. L., male, 60 years of age, a night watchman. Diagnosis: Arteriosclerotic heart disease, coronary occlusion, pulsus alternans, congestive heart failure. Admitted to Touro Infirmary, June 5, 1925, and died June 3, 1927. *Present Illness:* Had been feeling tired and weak for 5-6 weeks. Four days ago began to suffer with shortness of breath after exertion only, but constantly for two days. Some swelling of the feet recently. Orthopnea for past three nights. *Physical Examination:* Orthopneic and cyanotic. Slight edema of feet and ankles. Pulse 130, regular. Heart: Enlarged, sounds are distant at apex; pericardial rub near left border of sternum. Moist rales at both bases. Temperature 101° F. B. P. 135/95. Urine negative. P. S. P. 35 per cent in two hours. T. N. P. N., 49.8 mg. per 100 c. c. Wassermann negative. Blood picture shows moderate anemia. *Course:* Patient, under observation for a period of two years, was carried through five attacks of congestive failure and died during the sixth, June 1927. Admirable diuresis was produced by thorough digitalization and rest with a weight loss of 12½ pounds in six days on his second admission. On his third admission, decompensation was more marked and digitalis failed to clear up his edema. He was then given ammonium chloride and novasurol. The second dose of novasurol, 2 c. c. by vein, caused violent vomiting and purging which lasted several days. During subsequent admission, theocin was used with much success.

Comment: It would appear that this patient's life was prolonged by the use of diuretics, especially theocin in this instance. Novasurol, one of the first of the mercurial diuretics, produced moderate diuresis but almost precipitated his end by an acute toxic gastro-enteritis, and much of the weight loss during the following two days may be attributed to loss of fluid by vomiting and purging. Because of its toxicity novasurol is seldom pre-

scribed at present, being displaced by the newer mercurials which are much less toxic.

Case 2. W. B., male, aged 29, a farmer. Diagnosis: Chronic glomerular nephritis, hypertensive cardiovascular disease, anasarca. Admitted to the Touro Infirmary February 9, 1936, discharged March 26, 1936. *Present Illness:* Patient began losing weight and strength eight months ago. Dyspneic on slight exertion for six months. Severe headaches and frequent attacks of nausea and vomiting for four months. Orthopnea for past few weeks with increasing general edema. *Physical Examination:* Orthopnea and anasarca. Pulse 110. B. P. 220/160. Heart markedly enlarged; gallop rhythm; pulsus alternans. Abdomen: Prominent, shifting dullness; liver much enlarged. Crepitant rales at both bases. Urinalysis: 1.009, albumin 2½ per cent, sugar 0, pus cells, R. B. C., many hyaline and granular casts. T. N. P. N., 70 mg. per 100 c. c. Uric acid 8 mg. per 100 c. c. P. S. P. 12 per cent in two hours. R. B. C., 2,940,000; hgb., 65 per cent. Wassermann negative. *Course:* Digitalization had little effect on this patient's edema or urinary output. Because of the irritability of his stomach, diuretics by mouth were out of the question, therefore, with considerable trepidation because of the evidence of renal damage, he was put upon salyrgan by vein. The dose was only 1 c. c. and never increased but he received 21 injections. He left the hospital on March 26, 1936, and went home where he died on April 5, 1936.

Comment: This case illustrates how the edema may be controlled to some extent in a case of extreme congestive failure with impaired kidney function and a high non-protein nitrogen. It required considerable courage to give salyrgan in the face of definite kidney impairment but no additional damage was noted to the kidneys and the T. N. P. N. rose only 4 points in the course of a month.

Case 3. L. M. C., female, 50 years of age. Diagnosis: Alcoholic hepatic cirrhosis. Admitted to Touro Infirmary July 2, 1934 and discharged July 18, 1934. *Present Illness:* Began to be jaundiced one or two weeks before admission, when her abdomen also began to swell. She had been an alcoholic for many years. *Physical Examination:* Patient jaundiced. Temperature 99-101° F. Chest negative. Abdomen: prominent; liver much enlarged; ascites. Weight 152 pounds. Moderate edema of legs. Icterus index 75. Urine negative except for bile, and R. B. C. *Course:* The patient showed some improvement following treatment with intravenous glucose and sodium phosphate by mouth, but the ascites still persisted. She was put on ammonium chloride, gr. 60 daily, and given salyrgan, 1 c. c. by vein with markedly good effect. She was then discharged and advised to continue the injections at home. When she returned to the city July 27, 1934, her weight had increased

to 155 pounds. Ascites was quite marked, eyes icteroid and edema of the feet and legs. There was an ulcer over the right cubital vein where she had received an injection of salyrgan by her home physician. She was given 1 c. c. of salyrgan by vein. The following day she had severe headache and fever ranging from 103 to 104° F. The next day the temperature dropped to 100° F. On July 31, 1934 there was no edema of feet, abdomen less distended and eyes less icteroid. She was given salyrgan 1 c. c. by vein. The following morning her temperature was almost 103° F., and the next day she was normal (no malaria). She received six more injections of salyrgan without any febrile reaction. Her weight remained at 150 pounds. The abdomen was soft and the sclera clear. She appeared much improved. She then left the city and died April 28, 1935.

Comment: This case illustrates the care necessary in injecting salyrgan intravenously as the spilling of only a few drops into the tissues may produce an ulcer. The febrile reactions following the second two injections are difficult to explain as such effects must be rare. It should further be borne in mind that this patient was cholemic and running moderate fever prior to the treatment so that the mercurial injections may not have been entirely responsible for the febrile paroxysms. This case demonstrates the value of salyrgan in moderate doses in the control of ascites not due to cardiac decompensation.

Case 4. L. D., female, 40 years of age. Diagnosis: Auricular fibrillation, myocarditis, congestive heart failure, ascites, edema of legs. Admitted to Touro Infirmary January 18, 1937 and discharged March 16, 1937. *Present Illness:* Patient began having cardiac symptoms two years ago. Ten months ago her abdomen began to enlarge. A few months later her feet began to swell. Digitalization merely prevented an increase of the edema.

Physical Examination: Orthopneic. Moist rales at both bases. Heart much enlarged; no murmurs. Pulse 114. Heart rate 160. P. D. 46. Pulse and heart rhythm totally irregular. Abdomen markedly protuberant, shifting dullness (liver not palpable because of distension). Pitting edema of ankles. B. P. 140/80. Electrocardiogram showed "auricular fibrillation, definite myocardial disease." Weight 198 pounds. Venous pressure 270. *Course:* Digitalization improved her general condition. Six days later the abdomen was less tense and a large liver could be felt. Marked ascites, however, was still present. It was then decided to attempt reduction of the ascites by means of the mercurials. She was given a mercurin suppository on January 21, and 23, with slight increase in urinary output, and a loss of five pounds in weight. From this time on injections of salyrgan had striking effect, her weight dropping to 154 pounds, apparently her

basal state. Two intravenous injections of mercurpurin were also administered.

Comment: This case illustrates the value of salyrgan and mercurpurin in the control of ascites due to an old cardiac liver where thorough digitalization failed. It is quite probable that a preliminary abdominal tap, followed by the administration of the mercurials, would have shortened the patient's stay. Mercurin suppositories were not particularly effective in this instance, although there was some loss of weight, and no rectal irritation. After this patient reached her basal weight, salyrgan and mercurpurin were given alternately in the same dosage in order to compare their relative efficiency. Mercurpurin appeared to be slightly more effective than salyrgan in this instance.

Case 5. W. H. H., male, aged 69 years. Diagnosis: Arteriosclerotic heart disease, congestive heart failure. (January 7, 1936.) *Present Illness:* Had always been well except for arthritis. During past few nights has had smothering spells. Last night complained of pain in his jaws. His feet have been swelling at night for a few weeks. On January 10, he had an attack of acute pulmonary edema. *Physical Examination:* Well nourished and developed. Moderate general edema. Abdomen: prominent, probable ascites. Slight dyspnea. Crepitant rales at bases. Pulse 100, few ectopics. B. P. 165/85. Heart: Moderate enlargement to left; systolic murmur at apex accompanying first sound; short soft systolic murmur at aortic region; A₂ loud and metallic in quality. *Course:* The patient was digitalized during the first week. At this time the pulse rate was 70 and the general condition better although some generalized edema was still present. He was put on ammonium chloride and aminophyllin, or theocin, without much improvement. From April 1936 to January 1937 he was given salyrgan and mercurpurin injections with good diuretic effect, but a moderate amount of edema still persists.

Comment: In this case, both salyrgan and mercurpurin were used with good effect. In fairness to salyrgan it should be noted that mercurpurin was administered in larger doses than salyrgan which may account for the greater output. Two mercurin suppositories were given with splendid results and no rectal irritation.

Case 6. S. F., female, 58 years of age. Diagnosis: Diabetes mellitus, arteriosclerotic heart disease. Admitted to Touro Infirmary October 14, 1936 and discharged March 2, 1937. *Present Illness:* Progressive dyspnea for past few months. About the latter part of April 1936, she began to develop edema of her feet and ankles. She has been diabetic for 12 years. She was treated at Touro from May 2 to June 10, 1936, for congestive heart failure. After leaving the hospital, she took two or three units of digitalis a day. Two weeks ago she noted that her legs and also her abdomen

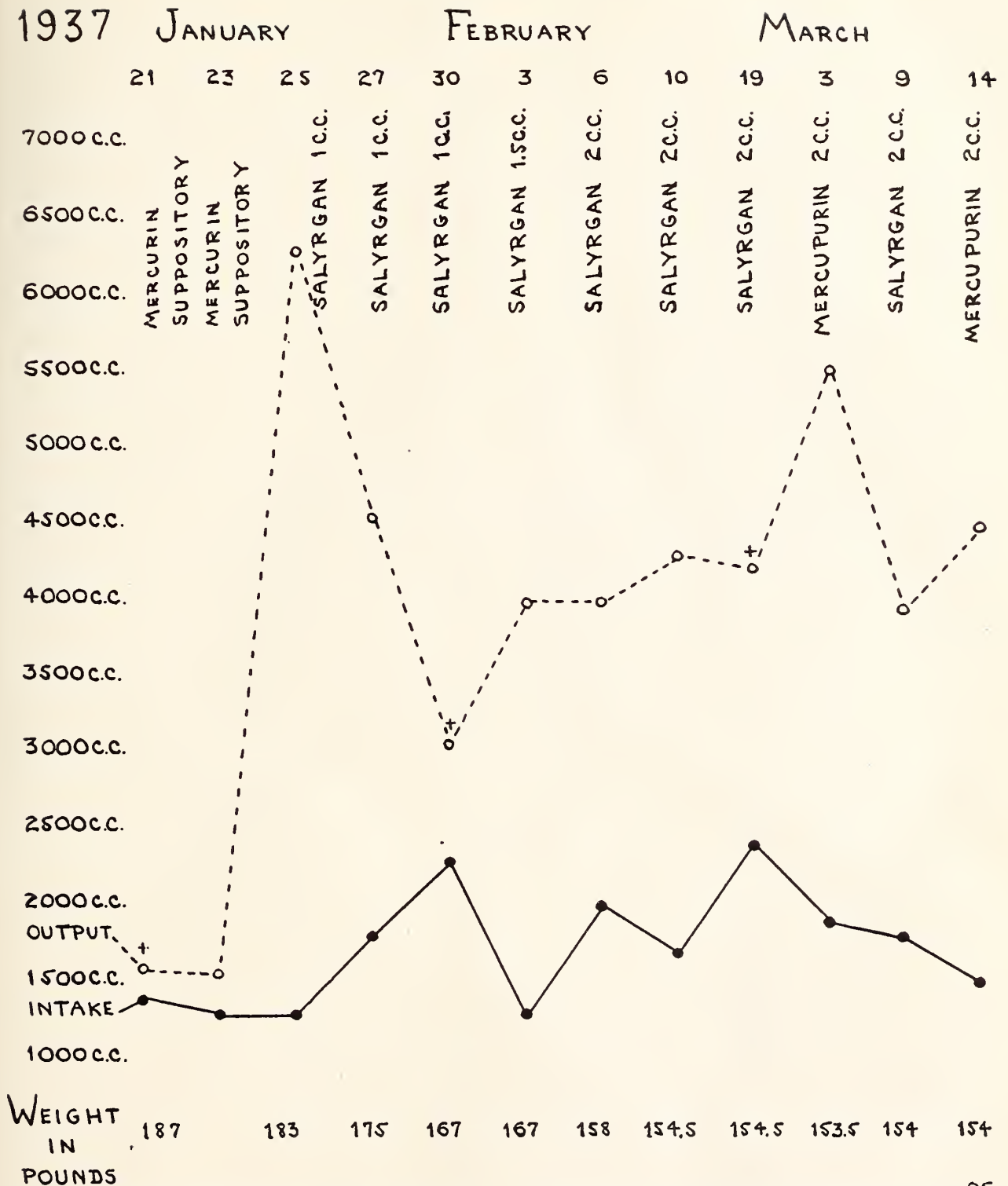


Chart 1, Case 4. Patient showed marked ascites of cardiac origin. This condition was entirely controlled

were swelling and that she had gained about 15 pounds in weight. The shortness of breath became more and more marked. Her urine is sugar free on a diet of 125 C, 60 P and 60 F. *Physical Examination:* Patient slightly orthopneic. Pulse 80. B.P. 148/90. Moist rales at both bases. Heart enlarged and heart sounds distant. Abdomen protuberant; some shifting dullness; liver palpable.

by the use of salyrgan and mereupurin. Note the loss of 29 pounds in weight over a period of two weeks.

Pitting edema of legs. T. N. P. N., 37.5 mg. per 100 c.c. Dextrose 105 mg. per 100 c.c. Urine: 1.012, sugar 0, albumin 0. Few pus cells. *Course:* After nine days of bed rest and digitalis, the edema still persisted. Salyrgan was advised and because of poor veins in cubital region it was injected into a vein on dorsum of left hand. During the injection a few minims escaped into the

tissues. This developed into a necrotic area which sloughed out leaving a large ulcer. It required 4 months to heal this lesion. The patient refused more injections of salyrgan, consequently a salyrgan suppository (0.4 gm.) was given on October 26. This caused excruciating burning in the rectum for about 20 minutes and no increase in the urinary output. As the edema was increasing the patient was persuaded to try mercurin suppositories. These gave excellent results for many weeks with no rectal irritation.

Comment: This case illustrates the extreme care required in giving intravenous injections of salyrgan, especially in a diabetic. In addition, this case demonstrates the practical value of suppositories. It is to be noted that as the patient gradually grew worse, the output of urine from the mercurin suppositories slowly diminished and finally it was necessary to resort to the intravenous route.

Case 7: B. F., male, 49 years of age. Diagnosis: Malignant hypertension, myocardial insufficiency, chronic arteriolar-nephro-sclerosis, generalized edema, ascites. Admitted to Touro Infirmary April 1, 1937; discharged April 7, 1937. *Present Illness:* Was told seven years ago that he had hypertension.

The blood pressure has gradually gone up to 250. Headaches for seven or eight years but worse during past year. Has slept poorly for past three months. For past six weeks has noted swelling of face and ankles, also abdomen. Dyspnea on slight exertion. *Physical Examination:* Fairly well nourished. Eyelids and face puffy. Skin pale. Weight 160 pounds. Mucous membranes slightly pale. Pulse 86. B.P. 260/140. Heart markedly enlarged; sounds are loud at apex; A_2 accentuated and metallic. Moderate substernal dullness. Radials thickened. Lungs: Crepitant rales at bases. Abdomen: Liver moderately enlarged and tender, shifting dullness. Edema of ankles and legs. Urine: 1.010, trace of albumin, sugar 0, hyaline and fine granular casts. T.N.P. N., 46.2 mg. per 100 c.c. Concentration test: 1.008, 1.010, 1.006. P. S. P. 40 per cent in two hours. *Course:* He was put on ammonium chloride, gr. 60 daily, and two days later was given 1 c.c. of mercupurin by vein with good results. Three days later a full dose of 2 c.c. of mercupurin was administered with still greater increase in urinary output. During his week's stay in the hospital he lost 13 pounds.

Comment: Previous to this patient's admission

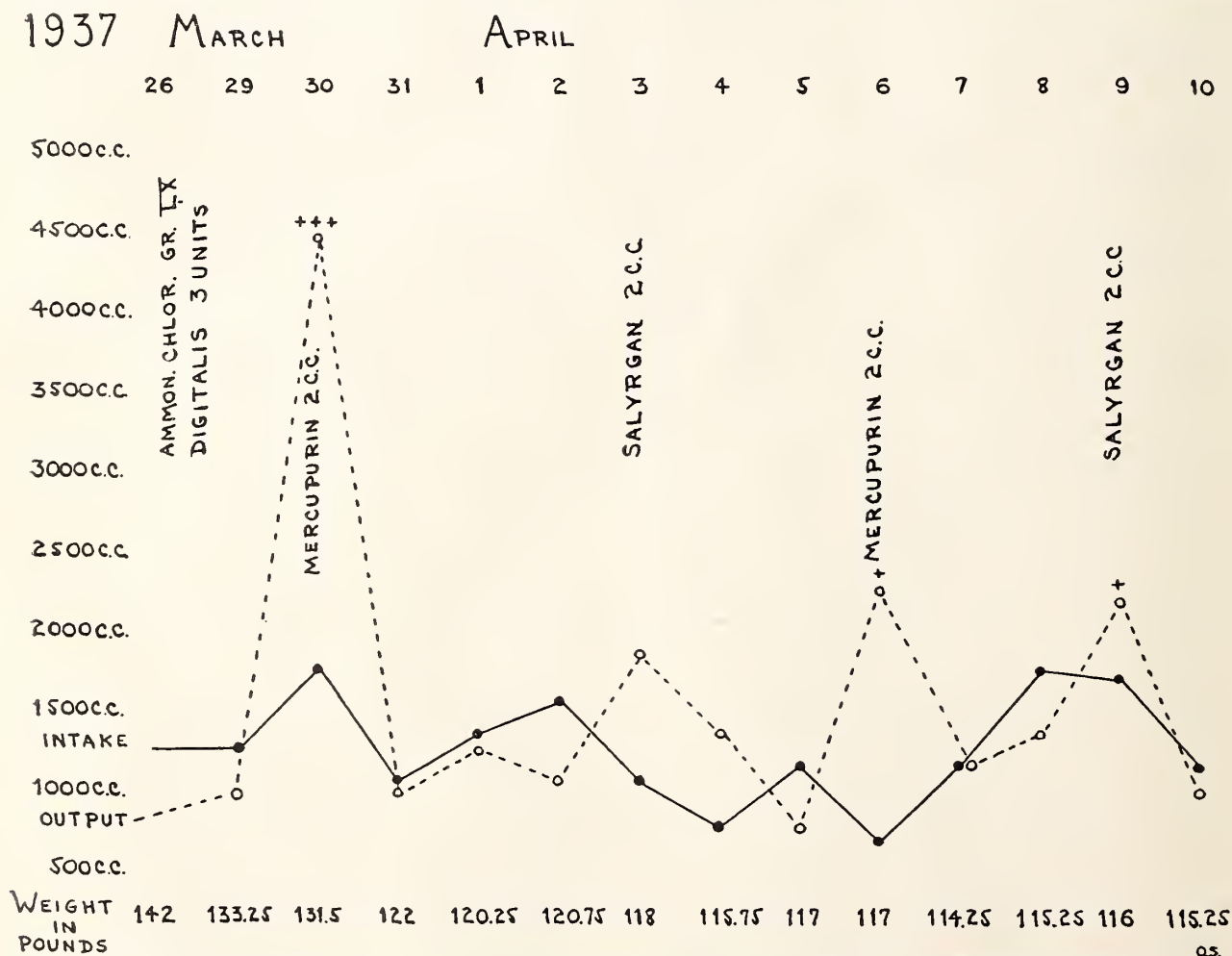


Chart 2, Case 8. Demonstration of the rapid elimination of anasarca in a patient with rheumatic congestive

heart failure of two months' duration, following the use of mercupurin and salyrgan.

to Touro he had gradually become more and more edematous and dyspneic, and it was felt that an attempt should be made to lighten the load on the heart by reducing the edema. This was accomplished by mercupurin without any ill effects, and he left the hospital feeling much improved. Since his return home he has been taking mercurin suppositories with good results. It is not to be expected, however, that this improvement will be anything but temporary; nevertheless, it exemplifies the fact that patients in terminal conditions may often obtain some relief from distressing symptoms by the mercurials.

Case 8. L. H., female, aged 55, graduate nurse. Diagnosis: Rheumatic heart disease, mitral stenosis, auricular fibrillation, generalized edema, Admitted to Touro Infirmary March 26, 1937. *Past History*: Rheumatic fever at 18 years. In 1906 she was told she had mitral disease and turned down by the British Army. Thyroidectomy in 1924. *Present Illness*: She had an attack of palpitation on January 1, 1937, but continued teaching in spite of increasing weakness, edema and dyspnea. On February 1, she was put to bed by her doctor, and given digitalis. The dyspnea and edema of feet and abdomen, however, did not decrease. She was sent to Touro on March 26. *Physical Examination*: Poorly nourished. Orthopneic. Dulness at both bases. Very slight exophthalmus. Thyroid not palpable: thyroidectomy scar. Pulse 90, irregular. Heart rate 96. Heart: Enlarged. First sound snapping with suggestion of late diastolic murmur. Abdomen much distended; liver enlarged, shifting dulness. Edema of feet and legs. Weight 142 pounds. Blood picture, slight anemia. Electrocardiogram showed auricular fibrillation. Blood chemistry normal. Wassermann: Negative. P.S.P. 80 per cent in two hours. Concentration test: 1.010—1.014. Urine: slight trace of albumin. Roentgen ray of chest, enlarged heart, pleural effusions, more marked in right chest, increased lung markings (congestion). *Course*: As the patient gave evidence of some digitalization she was put on six units daily for the first two days, then the dose was dropped to three units daily, and finally to two units. Ammonium chloride, gr. 80 per diem, was begun. After the fifth day, mercupurin and salyrgan were given alternately in 2 c.c. doses with surprisingly good effect. Twelve days after her admission, her weight had dropped from 142 pounds to 114¼ with practically complete elimination of her edema.

Comment: This case illustrates how rapidly a patient can be rid of edema with mercupurin and salyrgan, thus removing an enormous load from an over-worked heart. A roentgen ray taken April 11, showed complete absorption of the pleural transudates. The ascites has disappeared and the liver is smaller. Patient is no longer orthopneic,

and is comfortable and in good spirits. This case again emphasizes the slightly greater efficiency of mercupurin although the difference after eliminating the results from the first injection of mercupurin was very little.

SUMMARY

Eight cases are presented to demonstrate the value of, and the pitfalls encountered in, the administration of the mercurial diuretics. Of the three mercurials employed, one was discarded because of its toxicity (novasurol). Of the remaining two (salyrgan and mercupurin), mercupurin appeared to be slightly more effective in increasing the urinary output. When these drugs are used by vein, it is very important to be sure that no leakage occurs around the needle, and that the patient should be cautioned to state immediately the presence of any burning sensation near the puncture, in order that the injection be stopped at once. By this means necrosis and ulceration may be avoided. Patients who have very poor veins, or in whom it is not practical to use the mercurials by the intravenous route, may be treated with the mercurial suppositories which are generally quite satisfactory. The urinary output from suppositories, while slightly less than by vein and not of as long duration, is quite prompt in its appearance. Most of the output is over after 12 to 14 hours so that if a suppository is taken in the morning the night's rest is not apt to be disturbed, a factor which is advantageous. The only objection to this mode of administration is that it is less reliable than the intravenous route and at times causes some rectal irritation, salyrgan somewhat more so, in my experience, than mercurin.

Most of the cases received ammonium chloride in association with the mercurial therapy, for it is generally accepted that this procedure enhances the diuretic effect of the mercurials. It is my impression that theobromine and theophylline also augment the efficiency of the mercurials. There is evidence in the literature that mercupurin owes some of its diuretic power to its combination with a purin base, although the xanthines are not generally efficacious as diuretics except in large doses. Contrary to the opinion of many authorities, ascites has usually been satisfactorily controlled by the mercurials, minimizing the necessity for tapping,

and, at times, eliminating its use. In desperate cardiac cases with severe kidney involvement, the cautious use of small doses of the mercurials may prove that there exists sufficient functioning renal tissue to produce a good output of urine, thereby temporarily preventing the further increase of edema. Furthermore, in chronic congestive failure it is possible that not infrequently we delay the use of diuretics too long in waiting for rest and digitalis to free the patient of edema. When we consider the extra work imposed upon an already overburdened heart by the presence of edema, any measure that will aid in removing this load more rapidly and restoring compensation and cardiac reserve should be seriously deliberated.

It has been safe to inject the mercurials at three or four day intervals when indicated and no toxic effects were noted with salyrgan and mercupurin in moderate doses. In no instance was more than 2 c. c. administered intravenously.

In summing up, it may be stated that the mercurial diuretics, when properly used, will often prolong life and bring relief and comfort to the sufferer with chronic edema.

CONCLUSIONS

Experience in the administration of the mercurial diuretics permits the following conclusions:

1. Novasurol, because of its toxicity, should be discarded in favor of the newer and less toxic mercurials.
2. In cardiac edema, where full digitalization and rest have failed, salyrgan and mercupurin will frequently succeed.
3. Ascites due to cardiac or other forms of hepatic cirrhosis may often be controlled by the mercurial diuretics, or at least the interval between tapping much prolonged.
4. Of the two mercurials, mercupurin appears to be slightly more efficient than salyrgan.
5. Suppositories of salyrgan and mercurin are a practical addition to our armamentarium.
6. Mercurial suppositories are not as dependable and constant in their action as the mercurials by the intravenous route.
7. The previous and concomittant use of ammonium chloride by mouth enhances the diuretic effect of salyrgan and mercupurin.

DISCUSSION

Dr. A. A. Herold (Shreveport): I think Dr. Lyons has given us a very interesting and instructive paper. He said that when digitalis and rest fail in cardiac edema, he gives mercurial diuretics. I should like to add to rest and digitalization, high protein diet and low sodium intake. It is known that the sodium does the harm.

Why do I say high protein diet? Because I have seen edemas disappear, where there was not any renal damage of any kind, under high protein intake. Protein seems to have something to do with the osmosis of the tissues. For some reason, it helps the tissues take up the body fluids. In addition to that, these cases very frequently come to us that have been treated by their local physicians and protein entirely restricted, with the result that the heart is failing through want of proper nourishment. After rest, digitalization, high protein diet and the low sodium intake, then mercurials are in order.

My experience has been with novasurol and salyrgan. With the novasurol I had some toxic effects, mercurial poison. I have discarded that drug. With the salyrgan, I have never seen any ill effects, starting with $\frac{1}{2}$ c.c., combining it with ammonium chloride by mouth. I am giving the chloride, but not the sodium radical.

I would like to hear Dr. Lyons' expression on this addition to his preliminary treatment.

Dr. S. J. Couvillon (Moreauville): As I understood it, the medications recommended were for intravenous or intramuscular use. Naturally, those patients would have to report to the doctor's office, or the doctor to his patients' homes often and regularly. Doing general country practice as I do, it is a physical impossibility to see my patients as often as the doctors from larger medical centers and, of course, our methods of treatment must, or necessity, in most cases be straight oral medication. I would like to ask the doctor if he does not think that a preparation such as phenyl-mercuric nitrate, combined with urotropin, with digitalis when the elevation of blood pressure will permit and the measures which Dr. Herold so nicely brought out, could not as well be used in the treatment of edematous conditions when and where mercurial diuretics are indicated, with just as much efficacy as the intravenous and intramuscular preparations he mentioned?

Dr. J. B. Elliott (New Orleans): I have employed salyrgan lately in two cases, using suppositories, and I will never do it again. These patients had the most intense pain and soreness in the rectum, one suffered for three and the other for two weeks. I impressed on them the great value of the drug. They agreed thoroughly, but not by rectum for them.

Dr. S. Chaille Jamison (New Orleans): I would

like to ask Dr. Lyons if he always used ammonium chloride or if he sometimes used ammonium nitrate and, if he used ammonium nitrate, did he find any difference between that and ammonium chloride preliminary to the administration of salyrgan.

Dr. J. H. Musser, Jr. (New Orleans): There is no question that what Dr. Lyons has given us today is of tremendous importance and value. Time and time again patients are seen who apparently are carried along successfully with the use of these particular mercurials alone.

I have heard a good deal about the ill effects of novasurol, but I personally have never seen any patients hurt by the preparation. I remember writing to Dr. Keith, in the Mayo Clinic, several years ago asking him about it. I still have the letter in my files. He said he had never seen any ill results from it. I think, however, it is very much safer to use the other preparations from which there has been no ill report whatsoever.

There has been a patient in the hospital for some four months, a woman in chronic failure, to whom rest in bed was as a thin slice of bread and butter is to a hungry child, not much, and who was getting digitalis steadily all that particular time. This is in answer to the question of how often it can be repeated: During that period of four months, that woman had doses of salyrgan twice a week without any ill effects whatsoever. She would fill up again very promptly after taking the drug, and then it would have to be repeated. Undoubtedly, her life was prolonged for some months, and eventually she got sufficiently well to leave the hospital. I think that merely illustrates what Dr. Lyons has been trying to bring out, what a big help sometimes the use of these mercurials is for relieving the edema and, secondarily, taking the strain off a failing heart.

Dr. Randolph Lyons (In closing): I do not want to be misunderstood as stating in this paper that there are no other diuretics except the mercurials. I limited this paper to the mercurial diuretics because of the limitation of time. One cannot go into all the diuretics in fifteen minutes. I think we have other valuable diuretics besides the mercurials, but there are very few of those that can be used except by mouth, with the one exception, metaphyllin. That can be used by vein with pretty good diuretic effect. Most of the xanthine bases and other diuretics that we have, have to be given by mouth. Frequently we have patients with cardiovascular trouble, who are not able to take these drugs by mouth. Their stomachs will not tolerate them.

I agree perfectly with Dr. Herold. When I said,

after we had done everything we could for them with digitalis and rest, I did not mean there were not other measures besides digitalization and rest that could be done for cardiac patients. Patients on too low a protein diet may have their blood proteins reduced to the edema level. They need to be well nourished. I also agree to the statement about sodium salts. I think most of my patients were handled in that way. I did everything I knew how, at any rate, to get rid of the edema and did not succeed, and had to fall back on something else.

I cannot answer the question on mercuric nitrate by mouth, because I have never used it. In the literature, lots of mercurials have been used, but none of them has stood the test of time as well as those I mentioned as given by vein or by rectum as suppositories.

One of the patients discussed here had a great deal of pain and burning from salyrgan. My experience agrees to a very great extent with Dr. Elliott's, that salyrgan can be very irritating at times. Mercurin, however, does not seem to be irritating, or at least the irritation is very slight. I have given thirty-five to forty suppositories of mercurin, and I have had hardly any complaint from anybody about it, so it may be a better preparation from that point of view.

I cannot answer Dr. Jamison's question about the ammonium nitrate. I know of no reason why it should not be probably as effective as ammonium chloride. I have used ammonium chloride for so many years and with such satisfactory results that I have not seen any reason for trying any other. Now it is put up in enteric pills, so that it does not upset the stomach, and it is possible to get in pretty good doses of it with very little intestinal or stomach disturbance.

As to Dr. Musser's statement about novasurol, I know he is perfectly correct. At Mayo's, and in other places too, hundreds of doses of novasurol have been given with apparently little trouble. On the other hand, if you have two or three severe, toxic reactions from the drug, I do not care if somebody else reports a thousand administrations without any reaction, I prefer not to use it. I have given large numbers of injections of salyrgan and mercupurin, and I have never had any toxic reactions. The only reaction noted was in the woman with the jaundice and hepatic cirrhosis. She was running a fever anyway, and she had a paroxysm of temperature following two of these injections. I am not at all certain they were due to the mercury, because she took six injections after that and had no reaction whatsoever from them.

DIVERTICULOSIS AND DIVERTICULITIS OF THE INTESTINAL TRACT*

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Diverticulum of the colon was first reported by Druveilhier in 1849. The pathology of this condition was first described by Graser in 1898, and in 1914, Abbe first diagnosed diverticulitis of the colon by roentgen study. Following these pioneers there have been innumerable workers, and the literature has become quite voluminous. While at the present time the diagnosis of diverticula in some part of the intestinal tract is in a day's work of every radiologist, the majority of medical men are slow to suspect such pathology, probably because we are not diverticula conscious.

The incidence of diverticulosis of the intestinal tract is about 1.25 per cent in the duodenum and 6.6 per cent in the colon out of 3000 roentgen ray examinations, at the Cleveland Clinic (personal communication), and about the same at the Highland Clinic out of 3,681 observations.

It is estimated that one-fourth of the cases of diverticulosis develop diverticulitis, and about one-fourth of the cases developing diverticulitis will require surgical treatment. Diverticulosis is more frequently found in men than in women. The favored build is the short stocky type, usually past the age of forty. Whether or not these anatomic anomalies are congenital or acquired does not concern us in this discussion.

The anatomic characteristic is a herniation of the mucous membrane through the muscle coat pushing outward the visceral coat, like the so-called blister on an inner tube, which it, in fact, really is. Once this pouch becomes infected diverticulitis is present. This inflammatory process causes symptoms proportionate to the degree of inflammation, the amount of pathology present, and, to some extent, the anatomic location.

Secondary diverticula of the first portion of the duodenum due to duodenal ulcer are frequently encountered, and usually give no symptoms other than a vague uneasiness, some tend-

erness and indigestion. Treatment of secondary diverticula, due to duodenal ulcer is, of course, that of the primary cause.

Primary diverticulum of the second and third portion of the duodenum rarely requires surgery and certainly has no characteristic symptoms unless large, and retains barium for six to twenty hours in which case inflammatory changes may occur.

Treatment of secondary diverticula, due to duodenal ulcer is, of course, that of the primary cause.

SYMPTOMS

The symptoms of diverticulitis of the colon are often vague and ill-defined. The onset may at first go unnoticed or there may be a series of attacks of increasing severity before one comes to the realization of the fact that a deep infection is present. Occasionally, the first attack has a sudden and acute onset, simulating appendicitis though on the left side, so-called left-sided appendicitis. Diverticulitis, as a rule, is a chronic condition.

In a given case presenting exacerbations of subacute or acute episodes, with abdominal pain, most marked on the left side, though not always, constipation (diarrhea occasionally), fever and leukocytosis, particularly in the short stocky man, forty or more years of age, diverticulitis should be suspected. A roentgen ray examination should not be neglected. I have seen patients with right-sided pain, simulating both appendicitis and cholecystitis.

MEDICAL TREATMENT

The treatment of diverticulitis of the colon depends upon the severity of the process and the complications. Medical treatment is important, and should be instituted at the earliest possible moment. Complications may be prevented, and the duration of an attack may be materially shortened. The patient may have been seen rather late in the disease; a tumor mass may be palpated, even an abscess may be suspected, and yet, if obstruction is not present, proper medical treatment is the procedure of choice. Conservatism pays the best dividends. This above all other interabdominal inflammatory conditions deserves "watchful waiting" as regards surgery. Its very nature almost forbids surgery, except in emergency.

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

Rest is a prime requisite, as in any other inflammatory process; obviously rest of the colon is impossible. The nearest approach is to limit as far as possible peristaltic activity by interdicting all food by mouth for an appropriate length of time, followed at the proper time by non-residue diet. Intravenous glucose and saline should be given to maintain normal chemical balance. Heat should be constantly applied in the form of moist packs; antispasmodics to physiologic tolerance. Opiates may be required occasionally and should be given freely when indicated. Large doses of olive oil by mouth, and warm olive oil retention enema, is far superior to mineral oil. It facilitates easy painless bowel evacuation, causes no gas and is non-irritating. The value of rectal irrigation is questionable. As convalescence advances, a smooth diet should be used, gradually increasing the caloric intake. After recovery, the diet should be free of coarse fibers and seeds. Constipation should be prevented by the use of mineral oil by mouth, and the usual general principles of bowel management instituted.

SURGICAL TREATMENT

The surgical treatment of diverticulitis depends upon the complications which may arise. Drainage of abscess may be necessary. Resection of gut may rarely be indicated. Colostomy above the site of an obstruction may be the operation of choice. Abdominal drainage may occasionally be life saving when a diverticulum has perforated the gut.

The following case reports present the various conditions with which we may be confronted at any time:

CASE REPORTS

Case 1. O. L. H. has had numerous attacks of diverticulitis of the descending colon since 1933. He has been a patient in the Highland Sanitarium at least once a year since that time; occasionally, due to indiscretions of diet, he has had several attacks during the year. His symptoms are a generalized abdominal pain and usually preceded by constipation. After two or three days, his pain is most marked in left lower abdominal quadrant. There is general abdominal tenderness, most marked in left side. His temperature ranges from 99 to 102°. There is leukocytosis. Duration of attacks is from two to four weeks.

Roentgen ray examination reveals numerous

diverticula of the descending colon. Treatment has been rest in bed, hot moist packs to abdomen; olive oil by mouth and warm olive oil retention enemas, residue free diet. Dilaudid was given for relief of pain; glucose and saline intravenously. He is a short, stocky man, aged 50, weighing 185 pounds. He has always made a satisfactory recovery without complications. He died recently of coronary thrombosis while convalescing from an attack of diverticulitis. This represents the recurring type treated successfully medically.

Case 2. C. D. K. entered the Highland Sanitarium with the following history: Two hours previously while sitting at his desk, he suddenly experienced severe pain in the suprapubic region, shortly followed by pain in penis and scrotum, and desire to urinate. He was not badly shocked, but his board-like abdomen suggested a surgical abdomen. Operation revealed a large ruptured diverticulum of the sigmoid. He died of peritonitis. This represents the perforative type of diverticulitis without history of previous attacks, indigestion, constipation or abdominal pain.

Case 3. Mrs. J. B. O. entered the sanitarium complaining of nausea, vomiting and generalized abdominal pain. These symptoms progressed, necessitating a diagnosis of intestinal obstruction. Operation revealed the obstruction was due to diverticulitis, and 10 cm. of the terminal ileum, which contained the diverticulum, was removed. She recovered. This represents the obstructive type.

Case 4. J. H. R., a short, stocky man of 50 years of age, entered the Clinic with the history of hemorrhage from the bowel on numerous occasions. Recently a massive hemorrhage was experienced, but he had very little abdominal pain and little tenderness. He has had frequent attacks of indigestion. Roentgen ray examination reveals numerous diverticula throughout the gut, over 300 in number. Incidentally, it may be mentioned that this man's brother died of peritonitis resulting from rupture of the sigmoid while taking an enema. This case represents the hemorrhagic type.

CONCLUSIONS

1. Diverticulosis of the intestinal tract is frequently encountered in routine roentgen ray examinations, about 8 per cent.

2. Diverticulosis is more frequently found in men than in women, usually, of the short, stocky build, and in those past 40 years of age, though it may occur at an earlier age.

3. Diverticulosis is six times more frequently found in the colon than other portions of the intestinal tract.

4. Diverticulitis occurs in about 25 per cent of cases of diverticulosis. Twenty-five per cent of the cases of diverticulitis may require surgical treatment.

5. The outstanding symptoms of diverticulitis are generalized abdominal soreness, pain in lower left abdominal quadrant, associated with constipation (occasionally diarrhea), slight fever and leukocytosis.

6. A palpable tumor is frequently found in the obstructive or partially obstructive type.

7. Complications of diverticulitis are obstruction, abscess, hemorrhage, perforation and fistula.

8. The medical treatment of diverticulitis is rest, antispasmodics, hot moist packs, starvation followed by residue free food; glucose and saline by vein, olive oil by mouth and warm olive oil enemas; opiates when indicated; no colonic irrigations.

9. The main object of this paper is to emphasize the medical treatment of diverticulitis.

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DISCUSSION

Dr. W. M. Hunter (Monroe): All physicians are confronted with the symptoms of abdominal pain or distress. Of course, the appendix gets blamed for most of it. I have seen one or two appendectomies done that were semi-acute or acute, and on opening the abdomen, numerous diverticula of the large bowel were found. These apparently gave no trouble and no symptoms for years to come. Dr. Lloyd has brought to our attention the

frequency of diverticula. Those patients suffering with vague abdominal distress over long periods of time, I think after this presentation, will be investigated more carefully through the roentgen ray.

Diverticula of the small intestine and of the stomach are extremely rare. Diverticula of the duodenum are not quite so rare, and occur in approximately 1½ or 2 per cent of patients with upper abdominal distress, of whom roentgen rays are taken.

I had an opportunity to see a very interesting case. A good friend of mine had some pictures made for upper abdominal distress. A beautiful diverticulum of the duodenum was seen. He was rayed by a roentgenologist in another town, who kept the patient two days and took twelve pictures, and no diverticulum was seen. He was rayed six months later and the diverticulum was again demonstrated. It is probable that we do have many of these diverticula, but they are not demonstrated as frequently as they are present.

Dr. Lloyd brought out symptomless diverticulosis. Many people will be found, as he has shown, who will go through life and die, and at autopsy they will be found to have multiple diverticulosis with little or no history of abdominal pain.

The symptoms, as he brought out, are vague. On the right side there is the appendix, which should be looked into from the radiologic standpoint. It is true that in some of the acute surgical emergencies the roentgen ray cannot be used because the roentgen ray is dangerous, I believe, in the presence of a suspicious acute abdominal condition. The perforative type, of course, is diagnosed at operation.

The treatment, as he brought out, is strictly a medical problem, because there is no way in the world, with a large number of diverticula, to guess which one has been giving the trouble. The conservative treatment of diet and olive oil has proved best.

I do not recall seeing any cases of the hemorrhagic type. If I have seen them, I did not know the hemorrhages were produced by the diverticula or diverticulosis.

In reference to the percentage of diverticulosis, the consensus of opinion is that it is around 6 or 6½ per cent in the larger clinics. I think we, as physicians, should become more diverticulosis-minded, and we will find that the incidence is greater than we have found in the past. In this particular locality, I think our figures are probably a little less than 6½ per cent, as far as the diagnostic point has been made. It might run 8 per cent, but I do not think our figures run quite that high.

Dr. Lloyd has brought out that secondary diver-

ticula of the duodenum frequently follow healed duodenal ulcers.

Dr. Clifford P. Rutledge (Shreveport): I have been very interested in this subject for several years. It has been my pleasure to study all of these cases with Dr. Lloyd. Fifteen years ago we discovered a case of diverticulosis or diverticulitis more by accident than by intention. In the routine study of the gastrointestinal tract by means of the roentgen ray, we picked up a number of these cases. Now, when a patient comes into the Highland Clinic with pain in the abdomen and vague clinical symptoms, I immediately think of diverticulosis or diverticulitis and make an roentgen ray study. If I do not find it in the routine examination, I give the patient special preparation and make another study. I have missed some cases in the past, but when I restudied them after special preparation I found diverticulosis or diverticulitis.

The preparation is to put the patient to bed and starve him, or put him on a very limited diet for a few days, and then make the examination: Then I find the diverticulum empty, which will fill with the barium meal. In those patients who have acute symptoms it is not advisable to give the barium meal. The barium enema is given to which I add petrolagar or some mineral oil. That tends—I think it does, but I may be wrong—to decrease the lumping of the barium, and we find the enema evacuated very quickly after having made our study. I think this is very important in patients who have acute symptoms.

I have almost come to believe there is no such thing as left-sided appendicitis. Whenever an internist sends a case to me with a diagnosis of left-sided appendicitis, I immediately think of diverticulitis. Some cases are diagnosed as cholecystitis, but, on roentgenologic examination, they are diverticulitis. In one case, I found the two conditions combined. Cases have been diagnosed as renal colic or renal stone that were cases of diverticulitis. Dr. Lloyd spoke of cases of right-sided diverticulitis where the descending colon or pelvic colon was drawn over and attached to the head of the cecum. The patient had some tenderness, but not a great amount.

I had one patient diagnosed as left-sided appendicitis to whom I gave the enema with fear and trembling. The condition was very acute. The internist said he would accept the responsibility, but I accepted some of it with him. I gave the barium enema with the petrolagar, and at that time he showed nothing in the world but a marked spasticity of the descending colon. I could demonstrate no diverticula. I put the man to rest in

bed and restricted his food, and within twenty-four hours he passed two ounces of pus by rectum. I re-examined him later and found a large diverticulum on a pedicle; the diverticulum had drained through the anus. Fortunately, it ruptured into the gut and not into the abdominal cavity.

Dr. Allan Eustis (New Orleans): I wish to call attention to the similarity of cases of diverticulitis, especially of the sigmoid, to carcinoma. I think Dr. Elliott will probably recall the case of one of our confreres. At operation, the diagnosis of carcinoma of the sigmoid was made. I think a colostomy was done. At any rate, he lived many years after that. So in these patients, before the abdomen is closed, make a colostomy and possibly they might survive.

Dr. T. P. Lloyd (In closing): Ashhurst reported two cases, one in a child six years old, and another child seven years old, of diverticulosis of the colon.

Heredity may play some part. The patient who was shown on the screen, with such a marked diverticulosis, had a brother die shortly following an enema. He had a rupture of something, and he very promptly died of peritonitis following this enema, so he probably had a ruptured diverticulum. I do not know; he was not in our institution.

I may have made a misstatement about the petroleum oil being irritating to mucous membrane. I doubt if it is irritating very much. I do know that large doses of petroleum oil in almost any amount you want to give to control constipation, produce gas. A good many people are subject to gaseous distention after taking mineral oil, whereas that does not happen when you give them olive oil. That is why we use olive oil in preference to mineral oil. Olive oil is given as a retention enema to help bowel movement. Whether this gaseous formation is due to an irritation, or what not, I do not know, but I know it happens.

I did not say that 25 per cent of the cases of diverticulitis needed surgical procedure. I said 25 per cent of the cases of diverticulosis developed diverticulitis, and that it is estimated 25 per cent of those with diverticulitis would need surgery. I suppose 25 per cent of the cases of diverticulitis that go on to marked inflammation, resulting in an abscess, may need surgery. You may have a rupture that may need surgery; you may have an obstruction that may need surgery. The quotation I made from a very prominent clinic was, "it is estimated that 25 per cent of the cases of diverticulosis develop diverticulitis, and about 25 per cent of the cases of diverticulitis need surgery."

URINARY INFECTIONS IN CHILDREN*

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Acute urinary infections in infants and children are usually recognized, tend to be self limited, and clinically disappear in two to four weeks irrespective of treatment. In these cases the diagnosis of acute pyelitis is the rule and the designation cystitis is sometimes added. When the infection is neither self limited nor therapeutically cured within a period of four to six weeks, the condition is said to be chronic. Moreover, the diagnosis chronic pyelitis is made in most cases in which pus is persistently found in the voided urine specimen. Although the term pyelitis is clinically convenient to employ, it is wholly inadequate as a term pathologically descriptive of the basic lesions in urinary infection, be it acute or chronic. In many children in whom the diagnosis of acute pyelitis could justifiably be made on the commonly accepted diagnostic criteria, urologic examination has shown the acute infection to be limited to the bladder and urethral tract. Repeatedly I have found so-called chronic pyelitis to be simply vaginitis.

ACUTE URINARY (RENAL) INFECTION

The splendid work of Helmholz, Schloss and Wilson, Chown and others has shown the usual renal lesion in so-called acute pyelitis is a diffuse interstitial suppurative nephritis. Changes in the pelvis are of relatively minor concern and of themselves cannot be interpreted as an important element in the clinical picture in so-called pyelitis. More correctly the lesion should be designated a pyelonephritis for when the initial parenchymal pathology is hematogenous or lymphogenous, the pelvis is secondarily involved in practically every case. When the infection is ascending urogenous or lymphogenous the pelvic infection readily spreads to the parenchyma.

Once the infection reaches the interstitial tissues of the kidney minute diffuse suppurative

processes are set up. If the renal defense is adequate, the invading bacteria are destroyed and the minimal lesion caused by them produces no symptoms and heals without trace. When the invasion is more active, either numerically or because of diminished local resistance consequent to congestion or antecedent renal damage by toxemia, the interstitial inflammatory process progresses with cloudy swelling of the adjacent renal tubules, and an abundant influx of leukocytes, especially polymorphonuclear. By careful study of sections in these cases, the polymorphs can be demonstrated in the process of extruding themselves between the epithelial cells into the lumen of the tubule. With more active infection advanced tubular degeneration occurs, finally with irruption of the interstitial suppurative process into the tubular lumen. Leukocytes, which thus reach the drainage elements either by intracellular extrusion or suppurative irruption, constitute the bulk of the pus found in the urine in the usual forms of renal infection. It is notable that their origin is in the interstitial parenchyma rather than in an inflamed pelvis as the designation pyelitis so casually suggests.

With this pathologic picture in mind it is easy to understand why these patients are frequently so extremely ill with their infection and why therapy may fail. It is obvious that active attack upon the infection must usually be from above, i. e., through the systemic defensive mechanism or by medication orally ingested or intravenously injected. Medical therapy is apt to be unsatisfactory because the kidney severely injured by acute infection finds it difficult to eliminate the antiseptic drug in sufficient concentration to render the urine bactericidal. Moreover, gastric disturbances induced by the disease or by the drug itself may prohibit oral medication. In general in acute renal infection, therefore, we must rely upon the maintenance of free urinary drainage and upon the improvement of the patient's resistance to the infection by adequate intestinal elimination, improvement in nutrition, and in some instances by transfusion.

There are several other forms of acute renal infection which may clinically simulate suppurative pyelonephritis as just described. Yet only by prompt and thorough urologic investigation

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in these cases will the underlying pathology be recognized in time to permit the necessary surgical intervention. Such an investigation is urgently indicated in children in whom the picture of acute infection persists unchanged for five days. Rapid nephrectomy is often required.

The most common of these lesions is infected hydronephrosis which in children frequently results from congenital obstruction at the ureteropelvic junction. The usual obstruction is stricture, aberrant vessel compression, fibrous periureteral constriction or angulation secondary to ptosis. In these cases hydronephrotic renal injury is superimposed upon a histologic picture of suppurative pyelonephritis described in the second preceding paragraph. It is notable that in persistent acute renal infection in children, infected hydronephrosis is the lesion most often demonstrated and frequently in these cases the establishment of urinary drainage by the mere passage of the ureteral catheter to the kidney pelvis is promptly followed by astounding clinical improvement and rarely by cure of the infection. This was splendidly illustrated in a girl of eight weeks with persistent hyperacute pyelitis of eight days duration and localizing signs in the right renal region. Cystoscopic investigation revealed infected right hydronephrosis secondary to congenital ureteropelvic junction stricture; the infection was a pure culture of Flexner dysentery bacillus. The establishment of urinary drainage by the passage of the catheter coincident to urine collection and urography was followed in twenty-four hours by a decline of the temperature to normal.

Pyonephrosis is occasionally observed in the young; sometimes it is a late stage of prolonged acute infected hydronephrosis. Acute renal suppuration whether of the diffuse type (pyemic kidney) or of the more or less localized massive suppurative variety (the so-called renal carbuncle) occurs far more often than commonly recognized and in these cases the child is usually allowed to die with the diagnosis acute pyelitis.

Renal infarction and thrombosis result from severe hematogenous infection. These conditions are not uncommon in the young, especially in infants, but are seldom recognized except at autopsy.

Perinephritis and perinephritic abscess may result either from primary bacterial localization (hematogenous or lymphatic) in the perirenal fat or from secondary extension of a suppurative renal process to the surrounding fat. Contrary to common belief among physicians, the diagnosis of perinephritic abscess may be one of the most difficult in clinical medicine. The condition may simulate "acute pyelitis", disease in the lower urinary tract, skeleton, (hipjoint, spinal), intra-abdominal viscera, respiratory organs or central nervous system. The correct diagnosis can usually be made by a thorough urologic examination; one should not wait for the abscess to point in the loin.

PROGNOSIS

The prognosis in acute urinary infection is usually good in older children in whom the disease tends to be clinically self limited. The mortality in infants varies between 10 and 30 per cent and about three per cent of all children over the age of two with acute urinary infection will die. The ability to maintain nutrition and the security of free urinary drainage always improves the prognosis.

TREATMENT

As previously indicated, our greatest therapeutic aids in acute urinary infection in the young lie in: (1) the maintenance of adequate intestinal elimination; (2) the maintenance of nutrition; (3) the removal of focal infections; and (4) the combat of acidosis. The last is extremely important; the acidosis alone kills many infants with acute urinary infection. In older children the liberal employment of colonic irrigations will succeed better than any other measure in detoxifying the patient and may advantageously be used twice a day during the acute stage. It is assumed that an enlarged fluid intake will be administered during the therapeutic period.

Chemotherapy, with the exception of alkalinization, is contraindicated during the acute period, the liberal administration of glucose and alkalies, the latter as sodium bicarbonate or potassium citrate, will usually bring about striking and rapid clinical improvements. Yet this is attributable only to the successful combat of acidosis; the pus and bacterial content of the urine remains unchanged. Most so-called uri-

nary antiseptics are of doubtful bactericidal value and since there is none which may not seriously upset the intestinal tract their use should be actively avoided. Yet their employment in large doses is strongly urged once the child's condition will permit—either in the sub-acute stage or when he has become afebrile and gastrointestinal function is good. (See treatment of chronic urinary infection).

When urologic examination instigated by persistence of the acute clinical picture has revealed urinary obstruction or localized suppuration, appropriate treatment will depend upon the indications. Thus it may be necessary to establish temporary renal damage by an inlying ureteral catheter or vesical retention may demand an inlying urethral catheter. Perinephritic abscess may require incision or hydronephrosis, pyonephrosis, diffuse focal renal suppuration or renal carbuncle may demand nephrectomy. Sometimes decapsulation, nephrostomy, pyelostomy or ureterostomy will suffice to tide the patient over the acute attack.

CHRONIC URINARY INFECTION

Most children with acute urinary infection are symptomatically well in two weeks and the urinalysis is reported normal in four weeks. Yet in an extremely large minority (in Cabot's series, 50 per cent) the persistence of organisms in the urine will be demonstrated by culture six months later. No patient should be discharged as cured of his infection until at least two negative cultures of a catheterized specimen have been obtained. Moreover, in the study of urinary infections in females of any age only catheterized specimens should be considered and this holds also in males when the voided specimen cannot be aseptically collected.

Because of this persistence of asymptomatic urinary infection in such a relatively large number of children and in whom the condition may be demonstrable only by culture or may be accompanied by a microscopic pyuria, recurrences of acute renal infection are extremely common. These are usually flare-up processes consequent to the acquisition of tonsillitis, enteritis, or other acute focal infections, or occur with the onset of acute urinary obstruction. In many children pyuria of varying degree is accidentally discover-

ed during a routine physical examination. When the infection cannot be cured during four weeks of intensive medical therapy, the patient should be subjected to a complete urologic examination. Such an investigation commonly demonstrates a urogenital anomaly which causes urinary obstruction and/or stasis. It is axiomatic that an anomalous organ is more prone to disease than a normal one. The reciprocal relation between the existence of chronic pyuria and anomalous development in children has only recently received meritorious consideration.

Medical Therapy: No child with persistent pyuria should be subjected to cystoscopic examination until medical therapy for a period of two to four weeks has failed. In this therapeutic regime, intestinal elimination, the eradication of focal infections, improvement of the child's nutrition and the administration of urinary antiseptics in large doses are the measures to be employed. Prior to the advent of ketogenic diet therapy and its successor mandelic acid therapy, methenamine or urotropin in large doses remained our most successful urinary antiseptic and it is still the medication I first employ in children with persistent urinary infection. Yet the dose must be large: 10 to 12½ grains per day per year of age up to 75 grains. I have given more than this without ill effect. Ammonium chloride is my preference as a urinary acidulant and is given in sufficient dose to reduce the urinary pH to 5.5. This titer is readily determined by the use of methyl orange paper which turns red at about this acidity or by the use of nitrazine paper which is olive-mustard at this titer. As a rule we begin with equal doses of methenamine and ammonium chloride which is given for about five days. At the end of this time the catheterized urine specimen is examined and cultured and if not sterile the medication is repeated. It is useless to persist with this treatment longer than two weeks for if the urine cannot be sterilized in this period by this method its continuation is likely to be futile. If the urine is sterilized by this method one may usually rest assured that no important urinary obstruction exists. Hematuria induced by formaldehyde cystitis (urotropin reaction) is of vesical origin and will promptly disappear with cessation of the treatment.

The ketogenic dietary régime or mandelic acid therapy will sterilize the urine in about two-thirds of all children with persistent infection. It is important to recognize, however, that these potent urinary antiseptics will often sterilize the urine of children with important urologic anomalies and for this reason a urologic examination is indicated despite the success of the newer antiseptic therapy. The persistence of the infection prior to ketogenic diet or mandelic acid therapy itself suggests the likelihood of a urinary anomaly and obstruction. The child is at least entitled to a satisfactory excretory (intravenous) urographic study.

UROLOGIC EXAMINATION

In chronic urinary infection the establishment of the correct anatomic diagnosis requires a thorough urologic investigation. It is notable that instrumental reactions following complete urologic examination in children are less than half as severe as in adults and that fear of an unfavorable reaction should never be considered a contraindication to cystoscopic examination in the young.

UROPATHOLOGY

Obstruction will be found in most children with chronic pyuria subjected to thorough urologic investigation. Obstruction is the principal predisposing cause of urinary infection and once infection is established in the presence of obstruction, it rarely can be eliminated until the blockage is eradicated. Urinary stasis consequent to neuromuscular inertia must be considered a phase of urinary obstruction. I have seen several boys alleged to have chronic pyelitis but in whom the pyuria promptly disappeared following circumcision with the eradication of subpreputial urinary retention, stagnation, and infection. A congenitally tight urethral meatus produces obstruction and is frequently seen in girls as well as boys. Other portions of the urethra may also be congenitally constricted. In boys with persistent pyuria, congenital valves, hypertrophy of the verumontanum and congenital contracture of the vesical outlet are the obstructions most often observed in the deep urethra. It must be recognized that the severe renal injury consequent to urinary backpressure induced by these obstructions may of itself be fatal.

Neuromuscular vesical disease (cord bladder) is not uncommon in children; there are more than 85 cases in my series. The condition is frequently secondary to abnormal spinal or neural development; spina bifida occulta is the lesion most often demonstrated. Occasionally, in these cases of sacral cord bladder, laminectomy is of value but in general treatment is unsatisfactory and the prognosis is poor.

Urinary stasis and infection favor the deposition of urinary stone especially in the bladder. Diverticula of the bladder are frequently found in young patients with persistent pyuria and usually result as a blowout formation proximal to congenital obstruction at the vesical outlet or in the deep urethra.

Congenital stricture of the ureter is the commonest obstructing lesion of the upper urinary tract. I found 72 instances in 12,080 pediatric autopsies (1:168), but it occurred in 17.3 per cent (101 of 580 cases) of children with chronic pyuria. The demonstration of stricture requires a careful urologic examination. Ureteral dilatation alone will control many ureteral strictures and not only forestall irreparable renal damage by urinary backpressure but permit cure of infection. To accomplish this dilatation I have recently devised a miniature dilating cystoscope (17 F.) which will take a Garceau ureteral bougie as large as a slate pencil (10 F.). This affords ample dilatation for a child up to the age of puberty.

Ureteral reduplication was found in 166 cases of 26,480 autopsies studied (1:160), but it occurred in one of every eight cases of 580 children with persistent pyuria and in all of whom the anomaly was an important etiologic factor in causing the pyuria to persist. One or both divisions of the ureteral reduplication may be involved. In a number of children I found only half of the reduplicated organ was diseased and in thirteen patients ranging in age from five months to eight years ureteroheminephrectomy—removal of the diseased half of the kidney and the reduplicated ureteral segment draining it—cured the pyuria.

The ureteral orifice may be ectopic and open in the urethra, vagina or in the vestibule. These anomalous ureters almost always suffer urinary stasis and infection is frequently a complication.

Occasionally ureteral calculi are encountered in children. In a girl of 19 months examined because of chronic pyuria a small uric acid stone was seen in the bladder and two uric acid stones were demonstrated by negative pyelography and scratch on a wax bulb catheter in the left ureter, on which side the pyuria originated. These stones were spontaneously passed following instrumental ureteral dilatation and the infection was subsequently cured.

Ureteral obstruction etiologically associated with persistent pyuria in children is often due to an aberrant vessel. Most of these anomalous vessels pass to the lower pole of the kidney and by extra-ureteral compression at the point of crossing obstruct the ureter. I have now operated on 19 cases of vascular obstruction of the ureter in children in four of whom previous attacks of Dietl's crisis induced by the obstruction had caused the appendix to be removed. Conservative vascular resection will save some kidneys but in most instances far advanced renal injury and infection demands nephrectomy as it did in 11 of the 19 children in my series.

Occasionally anomalous vessels deep in the female pelvis compress the ureter. These are usually uterine vessels but may be a branch of the iliacs or hypogastrics.

Renal stones are not uncommon in children. I have performed nephrectomy for stone pyonephrosis in a boy of six months and in a girl of two years. Doubtless most small renal stones in children pass spontaneously and the symptom complex coincident to their passage is interpreted as intestinal colic.

Chronic suppurative pyelonephritis sometimes exists when neither antecedent obstruction nor any other predisposing factor can be demonstrated at the time the examination is made. Secondary inflammatory changes in the ureter and renal pelvis frequently render it impossible to determine the pathologic sequence.

Chronic renal tuberculosis in children is commonly diagnosed chronic pyelitis or chronic cystitis. Approximately one in every fifty to sixty cases of persistent urinary infection in

children is surgical renal tuberculosis. The symptoms of cystitis are frequently dominant. Having established the diagnosis, nephrectomy offers the only hope of cure when the disease is unilateral. Bilateral renal tuberculosis is a hopeless non-surgical disease. A tuberculous kidney was removed from a seven year old boy examined because of persistent enuresis of three year's duration. A mild pyuria had escaped detection. The so-called "enuresis" resulted from vesical hyperirritability consequent to secondary tuberculosis of the bladder and disappeared shortly following nephrectomy.

SUMMARY

Attention has been directed to the fallacy of the term pyelitis as pathologically descriptive of the important pathology in renal infection. The usual lesion is an interstitial suppurative pyelonephritis. Other conditions which may clinically simulate the picture in acute pyelonephritis have been briefly discussed and are likely to be demonstrated by thorough urologic examination in children whose acute urinary infection persists four to five days without abatement. The medical and surgical therapeutic indications in acute renal infection have been briefly outlined. Urinary infection not cured in four weeks by intensive medical treatment demands thorough urologic investigation. Obstruction will almost always be demonstrated and in an astounding number of cases anomalous development of the urinary tract will be found. It is notable that infants and children tolerate complete urological examination better than their elders; reactions are only half as frequent and they are much less severe in the young. Fear of unfortuitous sequelae should never be permitted to rule against the performance of a thorough urologic examination in a child when it is otherwise indicated. Having established the anatomic diagnosis in chronic urinary infection, treatment will be based on etiology. With the exhibition of proper surgical considerations it will be found that the young will stand radical urosurgical treatment equally as well as their elders.

One admonition more than any other I would leave with you: examine the urine.

THE RELATION OF THE LIVER TO NUTRITION WITH SPECIAL REFERENCE TO THE NERVOUS SYSTEM

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The liver is concerned in almost all of the metabolic activities that are carried out by the body, and must therefore be considered in any study of metabolism.

It is known that the liver is essential for the intermediary metabolism of the carbohydrates and proteins, and certainly important if not essential in that of the fats. This great gland performs in addition many other functions, having to do with the storage of anti-anemic substances and vitamins, the regulation of the circulating blood volume and the hydration of the blood, the production of substances concerned with the clotting of blood, detoxification, and the secretion of bile.

The clinical association between certain types of liver disease and pathologic changes in the brain and spinal cord have long attracted attention and incited discussion as to the significance of this relationship. Recently it has been shown that experimental liver damage may be followed by certain degenerative changes in the central nervous system.

CARBOHYDRATE METABOLISM

Since Claude Bernard, in 1849, enunciated his discovery of the part played by the liver in maintaining at a constant level the concentration of glucose in the blood, this function of the liver, which is unquestionably one of the most important activities of that organ, has been confirmed by every investigator who has studied the subject.

Recent investigations on unanesthetized cats by Tsai and Yi, and in dogs by Cherry and Crandall, the animals in each case being equipped with venous cannulae permitting the withdrawal of blood from the portal and hepatic veins according to the technic of London, have shown that the differences in sugar content between the blood entering and that leaving the liver are of the order of 10 to 20 mg. with an average of about 14 in cats, and 0 to 20 mg. with an average of about 8 in dogs.

It seems sufficiently obvious that a large fraction of the glucose supplied to the blood

by the liver must come, not from glycogen, but from a continuous new formation of carbohydrate by the liver from non-carbohydrate sources, i. e., from the process referred to as gluconeogenesis by von Noorden and Macleod. Crandall and Cherry have found that the addition of glucose to the blood by the liver continues unabated during a seven day fast.

Since the demonstration by Himwich, Koskoff, and Nahum of a glucose-lactic acid cycle involving the muscles and the liver, it has been recognized that a considerable amount of non-carbohydrate material available for purposes of gluconeogenesis is constantly being liberated from other tissues and presented to the liver in the form of lactic acid; that gluconeogenesis from fatty acids does not take place in mammalian forms. Amino acids, however, are constantly available and there is no question regarding the convertibility of these substances into glucose.

London has found from 0 to 10 mg. of urea for each 100 c.c. of blood. Crandall and Cherry, in preliminary experiments on fasting animals with cannulae placed in the portal and hepatic veins, have found an average of about 1 mg. more urea in the blood leaving than in the blood entering the liver. If it is assumed that 50 per cent of the protein molecule is convertible into glucose, then each milligram of urea formed might liberate 3 milligrams of this sugar. Lactic acid is, of course, convertible gram for gram into carbohydrate.

The importance of the liver for the homeostasis of the blood sugar is especially well illustrated by the train of events following hepatectomy. These have been especially well described by Mann and his collaborators in a series of reports, and they have found that in order to prevent the severe hypoglycemia, glucose must be injected at the rate of approximately 0.25 gram per kilogram body weight per hour.

The importance of glycogen storage in the liver, aside from its value as simply a reserve supply of carbohydrate, has received the attention of several investigators. Both Ravdin and Stone have shown that regeneration of removed liver tissue is much more rapid on a high carbohydrate diet, when the liver is storing large amounts of glycogen, than on a mixed

diet; the regenerative process is actually depressed by an unduly high proportion of fat in the food. The rate of formation of glycogen in the liver has been used to test the nutritive value of various sugars.

LIPID METABOLISM

Although relatively few studies have been undertaken with the specific object of determining whether or not the liver is essential for the normal metabolism of the fats and other lipids, we are not, on the other hand, familiar with any experimental evidence which indicates for the liver such a role. But even though fat metabolism is not known to be vitally disturbed during the brief survival period of hepatectomized dogs, there is a plenitude of evidence to indicate that the liver plays some part, even though it may not be a vital one, in the intermediary metabolism of the fats and other lipids. A point seldom stressed but worthy of consideration is the striking loss of fat from the depots in animals with certain types of experimental liver injury and in patients with cirrhosis.

Due largely to the work of Best and his group, it is known that choline will greatly reduce the amount of fat otherwise deposited in the liver when the diet contains much neutral fat or cholesterol.

OTHER LIVER FUNCTIONS IN RELATION TO NUTRITION

The majority of disturbances incident to abnormalities in the external secretion of the liver are too well known and have been too often discussed to warrant an extensive dissertation upon them here. The presence of bile in the intestines is not only essential for the absorption of fatty acids, but also for that of vitamin D. Carotene, the precursor of vitamin A, is not absorbed from the intestine in the absence of bile, though vitamin A is. When bile is absent from the intestine, the absorption of calcium and iron appears to be reduced.

It is not yet possible to state definitely that disturbances of calcium metabolism, and the similar abnormality in the metabolism of iron that is indicated by the anemia commonly accompanying complete biliary obstruction or bile fistula, are due to non-absorption secondary to the absence of bile. The insolubility of calcium

and iron soaps does, as is suggested above, offer one explanation for these changes.

In addition to laying down glycogen and fat, the liver stores a number of other substances that are essential for body economy, mainly vitamin X, B and D.

It has been shown by Ivy that while the liver of untreated pernicious anemia patients contains none of the anti-pernicious anemia substance, storage of this material occurs readily when these patients are given liver extract. Storage of this substance, of the anti-secondary anemia principle, and of iron are functions that relate the liver definitely to red blood cell formation and give a clue to the cause of the anemia frequently found in liver disease. This relationship is further amplified by the occurrence of macrocytosis of the erythrocytes in advanced cirrhosis of the liver in man and animals.

ANATOMIC AND FUNCTIONAL CHANGES IN OTHER TISSUES SECONDARY TO LIVER DAMAGE

In experimental animals, complete obstructive jaundice, bile fistula, and the Eck fistula have been most commonly employed for the production of chronic hepatic disturbances. The disturbances produced by chronic bile fistulae have been recently reviewed by Hawkins and Whipple, who list purpura, osteoporosis, cholelithiasis, duodenal ulcer, and intestinal intoxications as the more outspoken changes that occur. It is indeed striking that so many types of liver injury are followed by the appearance of ulcers in the duodenum which have most, if not all, of the characteristics of chronic "peptic" ulcer in man. Just why the non-reabsorption of bile should result in hepatic dysfunction is obscure, although the evidence of Hawkins and Whipple strongly indicates that this is the case.

While the relationship between liver function and the appearance of experimental ulcer in animals or spontaneous ulcer in man is still highly obscure, the evidence that such a relationship may exist is so suggestive as to stimulate further intensive study of this problem.

Since Hahn, Massen, Nencki, and Pavlov described in detail the symptomatology following excessive meat feeding in Eck fistula dogs, every investigator working with these animals has observed the functional changes in central

nervous system activity that can be produced in them by large amounts of meat protein. This is perhaps the classical experimental evidence for a relationship between liver and brain and cord. Convulsions, ataxia, blindness, coma, and death are characteristic of intense intoxication. Fischler believes the intoxication to be an alkalosis. The degree of central nervous system pathology found in these animals, even after they have been subjected to repeated intoxications, is surprisingly small.

More striking central nervous system degeneration was observed by Weil and Crandall following complete obstruction of the common bile duct in dogs. A spongy necrosis of the walls of the ventricles, and foci of edema and demyelination in the cortex, were produced. Proliferation of the glia occurred to the extent that dense felts or fibrous glia were formed; the mesenchyme was not involved. I am not aware of other types of central nervous system pathology produced in experimental animals by liver injury, but the experiments quoted are sufficiently convincing.

Clinically, there are a large number of observations pointing to an interdependence of the liver and the central nervous system. Rapoport has found diffuse parenchymatous degeneration of the brain in acute yellow atrophy; Kirschbaum reported diffuse changes in liver atrophy, and Weltman has made similar observations. Chevassut has reported decreased liver function in about 70 per cent of cases of multiple sclerosis. Crandall and Cherry found an olive oil splitting lipase in the blood of patients with multiple sclerosis which they also find in patients with liver disease; they suggest that it may be indicative of hepatic pathology. Lewantovsky has attempted to explain central nervous system changes in liver disease on the basis of a change in the hematoencephalic barrier subsequent to liver injury, but Eisele and Crandall could not confirm the alteration in the barrier.

Finally one must consider those diseases in which simultaneous pathologic changes in liver and central nervous system occur. In the last century, Leyden taught the concept of hepatogenous intoxication of the central nervous system. Quincke, Hoppe-Seyler, and Krehl, however, opposed this teaching and believe that a

disturbance of the detoxication function of the liver was the cause. Interest has been aroused in this subject again since the description by Wilson in 1912 of familial lenticular degeneration. Economo and Schilder, and Spielmeyer have pointed out the close relationship between this condition and the pseudosclerosis of Westphall and Struempell. The etiologies advanced have been varied, Wilson and Pollack feeling that the hepatic disease is primary and acts upon the central nervous system through a toxin, while Goldstein states that both liver and brain pathology are the expressions of an endogenous toxin formed elsewhere. Bielschowsky and Hanneberg feel that both are the result of congenital deformities, while Oberling and Kalbo postulate that disease of the central ganglia produces functional hepatic disturbances. The only evidence that can be presented for any of these hypotheses is the experimental demonstration, that damage to the liver may produce pathologic changes in the central nervous system. But this must be applied to combined conditions in the human with great caution, as there is no reason to believe that the various conditions in which liver and central nervous system are both involved may not have varying causations.

For every recognized function of this organ it seems that a test has been devised, so that the clinical pathologist finds himself at a loss to render intelligent advice to the clinician in the matter of the selection of a satisfactory test or group of tests. It is, therefore, comprehensible that for some time conflicting opinions will prevail.

By the use of selected combinations of the tests, functional disturbances of the liver are quite readily demonstrable when existent, but the goal which is foremost in the minds of all workers, is the discovery of a single test that will infallibly guide the surgeon in making a decision concerning the advisability of operative intervention. This objective even now may be attained by devious methods to a relative efficiency of perhaps 90 per cent, but, due to the perversity of nature, it remains extremely doubtful if absolute perfection will ever be attained and maintained.

RELIABILITY OF LIVER FUNCTION TESTS

Impaired liver function usually manifests

itself by demonstrable disturbances in deamination and uric acid destruction, by bilirubin retention or bilirubinate regurgitation, by a decrease in the volume of the bile output with a compensatory elevation of the bilirubin content of liver bile, by decreased tolerance for glucose, levulose, and galactose, by abnormalities in the blood sugar level, by the Burger or Althausen tests, by a lowering of the cholesterol ester content of the blood, by defective dye excretion, by changes in the blood proteins, by excessive urobilinogenuria, by the presence of a macrocytic hypochromic anemia, by high blood phosphatase, and often by means of the tests based upon detoxification. The reliability of these tests, however, depends on the existence of diffuse involvement of the liver or of sufficiently widespread focal involvement to exhaust the reserve power of the organ. Localized lesions, completely walled off, may involve a large portion of the liver without causing any functional impairment whatever, provided that the remaining parenchyma is normal.

Duct occlusion by atresia, calculus, or tumor, without liver damage, is usually demonstrable by failure to obtain bile by duodeno-biliary drainage, although some bile may be obtained in this manner when the obstruction is incomplete. When in doubt, the absence of damage to the liver parenchyma may often be established by normal blood chemistry, normal tolerance for the sugars, normal blood cholesterol esters, and low blood phosphatase. Unfortunately, once in a while liver damage coexists with obstruction, and exploratory laparotomy is necessary in the presence of conflicting findings.

My experience with the bilirubin tolerance test has been most disappointing.

JAUNDICE

Since jaundice, defined as a quantitative or qualitative abnormality in serum bilirubin, is the cardinal sign of a disturbance in liver function, consideration of the major aspects of this phenomenon is warranted.

Manifest in one or all of the three serum bilirubin tests (icterus index, van den Bergh reaction, quantitative bilirubin determination), icterus may be regarded as a constant feature of lobar pneumonia, congestive heart failure, acute alcoholism, febrile cholecystitis, acute

pancreatitis, malignant neutropenia, pernicious vomiting of pregnancy, sickle cell anemia, multiple granulomatous abscesses of the liver, and the exacerbations of pernicious anemia with the exception of its terminal aplastic phase. In Laennec's cirrhosis, it is practically always demonstrable, although occasionally of rather low grade intensity. It is frequently associated with duodenal ulcer. In eclampsia, its occurrence is not sufficiently characteristic to differentiate from the usual icterus of full term pregnancy. Among the leukemias, its incidence is high except in the myelogenous type. It is common in Hodgkin's disease. The readily visible jaundice of duct obstruction, catarrhal jaundice, Weil's disease, and acute red (yellow) atrophy of the diffuse or focal type hardly requires comment. Duct obstructions, however, may occasionally be incomplete and subject to spontaneous remissions, and a very low grade of icterus may at times be associated with acute atrophy. In septicemia due to pyogenic organisms, the hemolytic streptococcus, and the gas bacillus, jaundice with a positive van den Bergh reaction is as frequently demonstrable as a positive blood culture. In carbon monoxide poisoning, the degree of jaundice parallels the severity of the poisoning. Many liver poisons cause jaundice, including snake venom, poisonous mushrooms, coal tar products, arsphenamine, chloroform, dinitrophenol, carbon tetrachloride, phenylhydrazine, chloride of sulphur, trichlorethane, trinitrotoluol, tolylendiamine, pyrogallol, male fern, cinchophen, stophan, lead and potassium permanganate.

Jaundice is also frequently encountered in gangrene of all types, including Buerger's disease, in diabetes mellitus, active syphilis, miasma and malaria. Its occurrence in diseases caused by bile-soluble organisms, such as the pneumococcus, gonococcus, leptospira icterohemorrhagica, and trypanosome, demands critical analysis because of its possible relationship to the recovery mechanism. Such a relationship appears to be demonstrable in lobar pneumonia.

Since the occurrence of jaundice should always be correlated clinically with the entity in which it is encountered, and since its characteristics may vary considerably in identical clini-

cal entities, it is probably wise to avoid any fixed system of classification. For this reason the following etiologic factors are postulated as the greatest common divisors in the pathologic physiology of jaundice. Although often operative individually, two or more of these factors may coexist at any time, and one may frequently be superimposed upon another or supplant it during the course of jaundice.

ETIOLOGIC FACTORS IN JAUNDICE

1. *Duct Obstruction.* In the presence of obstruction of the common or hepatic ducts, or regional blockage of the interlobular ducts, bilirubinate regurgitates into the blood stream, giving rise to a positive van den Bergh reaction.

2. *Liver Damage.* In diffuse hepatic involvement, specifically of the central zone polygonal cells, by toxic, infectious, or mechanical factors, loss of bilirubinate from this zone will give rise to a positive van den Bergh reaction. In toxemias affecting only the peripheral zone cells, the serum bilirubin level is frequently elevated without a positive van den Bergh reaction, as in eclampsia.

3. *Pigment Overload.* In true hemolytic jaundice when an overload of pigment passes through the lobule of the normal liver, bilirubinate frequently is lost into the blood stream from the pigment-congested, sensitive central zone cells, causing a positive van den Bergh reaction to occur often at the peak of this icterus. This factor is operative in the icterus following interstitial blood extravasations (accidental and operative trauma, cerebral hemorrhage, scurvy, tubal abortion), and undoubtedly following hemoglobin injections.

4. *Adynamic Elevation of the Excretion Threshold.* This form of icterus, formerly termed "hemolytic", might better be compromised as pseudohemolytic in nature. In spite of a sustained elevation of the serum bilirubin level, the van den Bergh reaction characteristically remains negative when this factor is operative, as in familial jaundice and in pernicious anemia. Occasionally positive reactions may be encountered in severe exacerbations. The exact nature of this factor is difficult to define other than that a defect or anomaly exists in the acceptance mechanism,

whereby bilirubin is excreted normally but at a higher blood pigment level. It occurs physiologically in the horse, and in some three per cent of the human race, with its highest incidence in Semitic people. Transient operation of this factor may often be observed in low grade liver toxemias.

5. *Dynamic Elevation of the Excretion Threshold.* This factor is admittedly as yet theoretical, but affords the best plausible explanation of the rapidly ascending and descending jaundice of considerable intensity, associated with undeniable evidence of disturbed liver function, but without demonstrable liver damage, as encountered in the rare "true crisis" reactions of lobar pneumonia and uncomplicated cases of catarrhal jaundice. It may be explained by the withdrawal from action of more functioning units of the liver than is compatible with the excretion of the normal daily bilirubin production, as a result of which not only does the blood bilirubin rise accordingly, but also the functioning lobules, inadequate in number, become overloaded, leaking bilirubinate, and thus causing the appearance of the positive van den Bergh reaction. Alternation in functioning units will involve the entire liver in this "reactive state". The jaundice is capable of rapid subsidence when the liver commits to action an adequate portion of its lobular units. Liver damage may intervene.

6. *Patent Ductus Venosus.* The patency of the ductus venosus Arantii, acting as a natural Eck fistula during the first few days of life, prevents the liver from receiving its full blood supply, resulting in retention of bilirubin in the blood. When the ductus closes, the liver becomes subject to overloading with pigment, and positive van den Bergh reactions frequently occur. The visibility of this jaundice bears little relationship to its true intensity. Persistent patency of the ductus venosus might explain familial jaundice.

SERUM BILIRUBIN TESTS

In general, the three serum bilirubin tests afford a means of almost unlimited sensitivity and utility for the detection of disturbed liver function, provided they are applied repeatedly in a given patient and their normal values are properly evaluated. The normal range for the

icterus index lies from 3 to 5 for satisfactory sera (free from hemolysis, chyle, or murky brownish color). The van den Bergh reaction, by the ring test technic, is normally negative within an interval of ten minutes. The normal serum bilirubin level lies below 0.25 mg. per 100 c.c. Aberrations from these normals demand clinical explanation in terms of liver functions.

In the serial application of the three tests, some of the characteristics of jaundice may be defined as follows:

(a). A balanced icterus exists when the serum bilirubin content is approximately one tenth of the icterus index.

(b). An ascending icterus exists when the serum bilirubin content is approximately equal to or greater than one tenth of the icterus index, with a daily increase in both.

(c). A descending icterus exists when the serum bilirubin level is considerably less than one tenth of the icterus index, with a daily decrease in both.

(d). Jaundice may be said to be static when a balanced icterus obtains without any consistent change from day to day other than minor fluctuations in the bilirubin level, as in duct occlusion; or when the serum bilirubin level remains considerably less than one tenth of the icterus index, fluctuating only slightly, as in the common type of cirrhosis.

(e). Jaundice may be said to be dynamic when an ascending icterus is terminated uneventfully by a descending icterus after having attained considerable intensity. The peak of this curve is often indicated by a premature decline in the serum bilirubin level while the icterus index continues to ascend, commencing a day or two prior to the fall of the icterus index.

Practically nothing definite is known of slight degrees of dysfunction. For centuries, belief in these have existed in clinical medicine, no doubt with justice even though they be only of the hypothetic and assumptive order. The tests of its detoxifying function sometimes give suggestion but can in no sense be depended upon. On the other hand, high degrees of acute cellular inflammation and congestion (hepatitis) may show no jaundice or much if

any change in the size of the liver, the two most reliable signs of organic liver disease. In the more chronic conditions, advanced disease may exist without showing definite hepatic insufficiency in the three most reliable tests in my experience, namely the blood phosphatase with renal efficiency test, the bilirubin, and the hippuric acid test of detoxicating ability. Cases may even go on to hepatosclerosis without clinical suggestion of its presence and this being an accidental finding at necropsy. The profession should not deduct from this, however, that the hepatic deficiency test should not be part of routine clinical examination, because often some one or a combination of several would give valuable information, information which could not be obtained in any other way.

VALUE OF CLINICAL COURSE IN DIAGNOSIS AND PROGNOSIS

Acute infectious jaundice (hepatitis) is an ideal illustration of the reserve power of the liver in an acute febrile disorder of short course accompanied by all the constitutional symptoms of severe illness. While the mortality is but one or two per cent, the disease shows in its about thirty day course, the length of time the liver takes for restitution. The same may be said of acute spirochetal hepatitis (Weil's disease)—here usually the commonly seen relapse, after ten days or fourteen days, breaks up the clinical course and may prolong restitution for a few days. An exception is noted in yellow fever, the toxic factor of which is a rapid destroyer of the liver and kidney parenchyma, and the same may be said of acute suppurative hepatitis of the pyemic, multiple or necrotic area types, which, in my experience, is most often due to infections of *Escherichia coli*, staphylococci and *Clostridium Welchii*. The chemical intoxications generally run a protracted course. In acute yellow atrophy one meets for the first time in serious liver disease, the effect of liver disease on the nervous system due to the multiple cerebral foci that so commonly exist. The course in chronic hepatitis is protracted, the same being true of diffuse syphilitic cirrhosis and the gumma form. Remembering the liability of one condition into another, the acute into chronic (such as is seen in chemical degeneration into yellow atrophy), there are clinical, prognostic and

treatment values in the limited and protracted course of different liver conditions.

NERVOUS SYSTEM

The liver in connection with the nervous system has its main interest in the supposedly liver origin of a vast array of symptoms in which pain and distress are present. Brain and spinal cord conditions, infections, tumor formations and syphilis comprise the known etiologic factors. Here disturbances in cerebration and motility are conspicuous. There are, however, effects of many body conditions on the somatic sensibilities recorded in the brain and spinal cord reflexly bringing about sensory phenomena registering in other parts of the body. In this the liver could participate as might any essential organ in the body. This holds particularly true in the autonomic nervous system, which is definitely a part of the cerebrospinal division. The autonomic nervous system presides over the functions of the organs of the body and it is by way of it that reflex effects are brought about. It innervates the involuntary smooth muscles, all the glands, regulates heat production and loss, mobilizes glycogen in the liver, the rate, force and rhythm of the heart beat, the peripheral arterial flow, the blood volume and hematopoiesis, presides over all matters of nutrition, and in its two divisions is catabolic and anabolic in balanced functions. It is easily influenced by pathology existent anywhere in the body, and by hormones or drugs. It really is an integral part of every other system of the body, reaching from every organ to the chief nuclei and fiber pathways, and from them to other parts of the cerebrospinal system and from within itself to other parts of the autonomic system.

Chronic inflammation and intoxications, both endogenous and exogenous, explode from centers of origin into areas, producing systems often remote from original location. Other than heredity and congenital, the etiology of many diseases in the nervous system are unknown, but generally throughout many of them there is a strong belief that they have a toxic origin. In progressive lenticular degeneration, combined degeneration of the cord, syringomyelia, presenile dementia, multiple sclerosis, neuritis and neuralgia and the functional states of

neurasthenia, psychasthenia and neurotic symptoms, this often is most suggestive. Of course, syphilis, infections and tumor formations are definite etiologic groups.

The clinical and necropsy studies of polyserositis (Pick's disease) strongly suggest that this disease is fundamentally cardiac and mediastinal in origin and that the pathology of the liver is secondary to compression of the inferior vena cava from adhesions which cause compression and stretching of the liver—engorging congestion.

Progressive lenticular degeneration (Wilson's disease) is most probably a central neurologic affection. The syndromes are striatal and due to the spread of the disease into the thalamic nuclei. This explains the emotional and intellectual failure, resulting in total dementia. Far more numerous than pathologic disease of the nervous system, are the instances of those we call functional, and in these, the neuroses are the most frequently met with. Fortification is taken in that it has never been proved that changes in inner tension bring structural changes in the nervous system, although I have brought out that long standing toxemias, especially intestinal, can bring about stippling, shrinking of cell body, and destructive changes in nerve cells and neurons. These sensitize the psyche, and, like any illness of material kind, as daily hospital experience and convalescence prove, upset normal innervation. So definite is this that it is common clinical experience to see a neurosis disappear when the toxic factor is removed. It is proper to view the whole subject of the neuroses and psychoses that it should rest on and be supported by internal medicine and to put away the notion that psychiatry deals just with mind disease. One patient cannot be said to have a disease of the body, and the other a disease of the mind. Logic and common sense demand for medicine, psychiatry and benefit to the public that they go hand in hand. Even Freud has said in his last lectures that he is not sure his theories of phylogeny of personality is a contribution to therapeutics.

The liver has no more important function than its detoxicating ability, and toxic substances from the intestines passed into it by the

portal stream. These should be conjugated by the liver but may not be (or totally enough so) by the general body, and would have a baneful effect on the nervous system. There is then a trilogy, the intestines on the supply side, the eliminations of the body on the opposite, and the liver and almost all the tissues of the body between the two. These intestinal states are due to chronic infections of bacteria made worse and only incompletely and temporarily controlled by diets, medications or irrigations, and can best be controlled by immunity producing measures.

LIVER DEATHS

At necropsy in liver failure one sees changes in the liver cells and definite necrosis accompanied by varying degrees of change in the renal tubule cells.

The syndromes characterizing liver deaths may be divided, according to Williams, into three classes: (1) Those in which there is a sudden onset with high fever, coma and rapid death, without signs of uremia; at necropsy only necrosis of liver cells is found; (2) those in which there is a similar picture with later onset and longer duration, with more gradual increase in symptoms including signs of uremia before death; necropsy discloses liver damage of varying degree accompanied by degeneration of liver tubule cells; (3) those in which slowly increasing exhaustion, muscular weakness, subnormal temperature, and decreasing blood pressure progress to terminal vascular collapse, coma and prostration; necropsy shows some change of the liver cells, if not definite necrosis.

THYROID CRISES

There is no more alarming condition in medicine than this illy understood status of profound toxemia. In at least two-thirds of the cases there is definite evidence of liver damage. In the condition there is distinct exhaustion of glycogen, and the impossibility of its storage is present.

PERNICIOUS ANEMIA

The earliest sign in the nervous system of this disorder, in addition to tingling, is loss of vibration sense. There is no more striking advance made in medicine than the effects of liver therapy in this form of anemia, no more striking proof than is bound up in that one of

the functions of the liver is its role with bone marrow in erythrocyte production and formation. Macrocytosis is a common finding in advanced or widespread liver disease variously estimated at about 90 per cent. Among the additional nervous symptoms may be mentioned vibratory disturbances in the lower part of the body, hyperflexia, subacute combined degeneration of the spinal cord and cord nerve root changes. The pathogenesis of the neurologic involvement is unknown, but the lesions in the nervous system are no longer held to result from the anemia per se. Liver therapy is especially helpful to produce improvement in the neurologic symptoms of this disease. In the psychoses accompanying or associated with it, liver therapy is not as helpful as when distinct nerve lesions are present. The psychotic symptoms briefly are mental confusion, disorientation, fatigue, poor attention and low intelligence.

STARVATION

This is recognized as a clinical condition of interest in the way of the nervous symptoms which most probably are more particularly due to liver deficiency. The clearest cases are seen in the martyr produced form in which the cardiovascular reflexes lose their fine coordination, hence faintness and dizziness, bradycardia, failing systolic and pulse pressures, slowing of respiration, and loss of lipoids. In some disorders, the nervous symptoms are more prominent, strikingly seen in connection with pellagra in which irritability, depression, apprehension, hallucinations, changes in personality, and even dementia are observed. This being a deficiency disease of nutrition closely linked with vitamin B (G), it leads strongly to the suggestion that proper liver function is also bound up in proper vitamin supply.

DIABETES MELLITUS

Even though the disease was known to the ancients of the first century, the last word and all that should be known about it are still crying for solution in medicine. I have drawn attention to the importance of the lack of enzyme ability in the external secretion of the pancreas in its production. When this is deficient enough there is a shortage in making molecularly complete monosaccharides for conversion into chemically complete glycogen, or

there is present an inability of the diastatic enzyme glycogenase to be able to act upon the sugar substance in the way of holding back its release to the body. In many cases the amylase is nil. There is added significance, as I have shown, in the benefits that come from pancreatic preparations (especially feedings with raw calf and sheep pancreas) without the use of insulin hypodermically. In a series of 100 insulin users in diabetes, 47 were rendered and held blood sugar below 120 mg. and negative urine on raw pancreas without insulin; 43 on pancreas with half and lesser doses of insulin; and in 10 continuation of insulin was necessary. Reasoning further from these facts, it is probably that hyperinsulinism is fundamentally a disorder of the islands of Langerhans', whereas the average case of diabetes mellitus is a more complex disorder, although in instances it could come from pathology in the islands of Langerhans' alone.

BILIARY PASSAGES

One cannot separate diseases of the gallbladder and bile passages from diseases of the liver. Disease in the biliary apparatus commonly brings on organic changes in the liver tissue. Hepatitis of varying degrees and perhaps dysfunction may exist in biliary duct and gallbladder disease. Swelling and stiffening of the left lobe of the liver is a common finding in gallstone disease and quite characteristic of the condition. Swelling of the entire liver is more characteristic of disease of the liver as a whole, such as is seen in cirrhosis, infective states, or the secondary states of passive congestions, such as are seen in cardiac and pulmonary disease.

Distinct neurotic symptoms may ensue with emotional and various painful and neurovascular disturbances anywhere in the body. These are cases that do particularly well under spa management and treatment.

INTESTINAL TOXEMIA

Detail regarding these need not be gone into here, but a few words on phenolemia and indoxylemia may be mentioned. The blood phenols are mostly of small intestine origin and formed by bacterial putrefaction of proteins. They are found free and combined in the blood and to a lesser degree in the tissues. Indol,

made from tryptophan, is converted in the liver into indoxyl. It also is formed mostly in the intestine, more so in the large, and accumulates in the blood. The conversion of this substance is almost entirely hepatic. In hepatic detoxification deficiency, indolethylamine, indolpropionic and indolpyruvic acids are liberated into the blood stream. Indicanuria cannot be taken as a basis of hepatic efficiency estimations because its principal site for storage is in the blood, not more than one-tenth to one-seventh being stored in the liver, as compared to the blood and skin. The methods of handling these conditions are biologic, dietetic, exercise, fresh air, increasing skin activity and bowel and kidney elimination.

HEPATIC CIRRHOSIS

It now seems that the term "alcoholic cirrhosis of the liver" should be abandoned. In both Laennec's and Henot's classifications, the localization of the lesion about the portal radicals strongly suggests a gastrointestinal source, probably a type of chronic toxemia, in the small intestine, in which it is possible, a suitable type of toxemia being present, alcohol has an enhancing effect. This would explain portal cirrhosis in the young and non-alcoholic and the absence of it in many cases of chronic alcoholism. Bowles and Clark in 4,000 consecutive autopsies found cirrhosis in 243 (6 per cent), 84, or 35 per cent, in alcoholics; and 159, or 65 per cent, in non-alcoholics.

GOUT

This is largely a forgotten disorder, although it is one of the oldest in medicine. In late years it has been confused in the subject of arthritis, from which of late it is being redeemed and brought back in significance. It is probable that heredity plays in some way in there being present a deficiency of hepatic cell function in manufacturing urea. The liver is the largest maker of urea in the body and uric acid is a sub-product of it. I have suggested that in gout the uric acid was generally above normal, high in the blood during the time of acute manifestations, not so high but usually above normal in the subacute or more chronic types, although it might be normal down to 5 mg.; generally, the average in gout is about 7 and it may be as high as 17 mg. The

important point made was that if the uric acid of the urine was also estimated, it could be found that commonly when it was high in the blood it was lowered in the urine and that when it was high in the urine it was high in the blood and generally at that time there was an abatement of symptoms. I suggested that instillation of oxygen into the colon, probably by its effects on the liver, was the most valuable item in the control of the manifestations of this disorder.

SUMMARY

I have endeavored to review the more important conditions associated with liver damage and the direct or collateral effects upon the nervous system and other bodily tissues.

MENSTRUAL PURPURA*

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When one considers the many causes of purpuric rashes, it is no wonder that I have been hesitant in presenting this "symptom-complex" in relation to menstrual disturbances. In my eight years of practice of medicine, I have encountered five patients, each presenting symmetrical purpuric rashes of lower extremities coincident with, or apparently related to, the menstrual periods. Only two are presented in detail. The first case encountered caused me a great deal of anxiety, as well as the patient and all concerned, until a complete examination had been made which was necessary to eliminate essential purpura. Once having eliminated essential purpura, I was more at ease as to the prognosis but as for treatment, I was at a loss, since my search in literature failed to produce, at that time, more than one such case, and consulting more experienced clinicians did not assist me, since the cases recorded are so few, all consulted having denied ever seeing a similar case.

Even today it has been exceedingly difficult to find much literature on cutaneous hemorrhagic manifestations occurring at the

time of, or related to, the menstrual cycle. Weitgasser and Cafasso¹, German physicians, report a case of menstrual urticaria hemorrhagica in 1924. Ellman and Weber² report a case of recurrent menstrual purpura in 1935. These are the only two cases in literature I have found almost to parallel the five cases in this series.

There are many reports on menstrual exanthemas but I wish to differentiate these manifestations from the bilateral, almost symmetric, purpuric rash of lower extremities which so clearly defines this series.

The following is a typical case, first observed and treated by me in 1930:

CASE REPORT

Case 1. The patient was a single girl, 18 years of age. She consulted me because of a bilateral red spotted rash on feet, legs and thighs. She began menstruating three days before onset of rash. The first two days the flow was much more profuse than usual but on the third day the flow became scanty, and it was following this scanty flow that the rash occurred. The scanty flow persisted for six days, and during this time, and for five or six days after, the rash persisted. The patient described her limbs as being "speckled" with a "red to purple" rash, the skin always remaining smooth, with a slight tendency, at times, to itch. The spots would not disappear on pressure. There was no pain.

Previous Medical History: Pertussis at six; measles at seven, tonsillectomy and removal of adenoids at 10.

Medical History: She began menstruating at the age of 12, always regular, three to four days duration, the first two days for past three or four months have been noticeably more profuse than before, the last two days more scanty. She becomes quite nervous during the periods.

General Condition: Height 5'2", weight 118 pounds, well developed, general appearance healthy. Temperature 98.6; blood pressure 114/90; respiration 20; pulse 88.

The thyroid was slightly palpable, symmetrical and soft. The breasts were well developed. The lungs, heart and abdomen were normal.

Genitalia: Hymen intact, but would permit digital examination which showed cervix and uterus somewhat smaller than normal.

Laboratory Data: Urine—Negative.

Blood examination: Red blood cells 4,670,000; white blood cells 7,000; hemoglobin 70 per cent (Talquist): N 54: LM 6: SM 38: E 2: platelets 175,000; bleeding time 2 minutes, 15 seconds:

*Read before the Joint Session of the New Orleans' Gynecological and Obstetrical Society and French Hospital Staff, New Orleans, Louisiana, May 14, 1937.

coagulation time one minute, 45 seconds: blood calcium 9.6 mg.

The following is a brief resume of the last case to come to me for treatment:

Case 2. This patient was a married lady, 30 years of age. She consulted me because of a red to violet spotted rash around the ankles and legs; extreme nervousness and scanty menstruation since August 1936. The patient states specifically, that she was always regular in menstruation until August of 1936, the periods lasting from five to seven days with a normal flow. Since August 1936, each period lasts from one to two days and the flow is very scanty. One week before the menstrual period in January 1937, a red, spotted, rash began to appear around the ankles and within a few hours had spread over the legs to the knees. She described this rash as being perfectly smooth with the skin and the spots appearing from a red to purple to even violet in color, varying in size from pin point to one cm. in diameter. These large areas were more predominant in the regions of the ankles, and these large areas seemed to pale or fade in the center, giving some of them a circinate appearance. With the onset of the menstrual flow she was put to bed by her physician as the spots seemed to become more pronounced. She remained in bed for four days after the menstrual flow had ceased and the spots disappeared completely. There was an interval of about fifteen days during which time she was apparently well except for being extremely nervous. Four or five days before the next menstrual period, which was in February of 1937, the rash began to appear again, this time occurring just as it had done previously. The spots became more pronounced until the actual menstrual flow began and then gradually disappeared at the end of four or five days following cessation of menstruation.

Family History: Essentially negative.

Past Medical History: She had influenza several times; mumps, measles, whooping cough; cervical adenitis in 1935; sinus infection in December 1936; has had several sore throats in the past four or five years, the last one occurring in January of 1936. Appendectomy and tonsillectomy in 1926.

Menstrual History: Began at the age of 14; it has always been regular; duration of flow was five to seven days until August of 1936 and since then it has been very scanty and lasting one to two days, twenty-eight day type. She has never had profuse menstruation. The last menstrual period was April 24, 1937.

Inventory of Symptoms: At the time of the last three menstrual periods she seemed to be somewhat weaker than usual. There was no fever. She was unusually nervous and presented

the rash on the lower extremities as previously described. She never suffers with headache; her eyes fatigue easily on reading but there does not appear to be any defect in the vision. She does not have any disturbances at all with her ears. There is no obstruction to either nasal passage; she occasionally must clear her throat to expectorate mucous that drips back into the rhinopharynx from the ethmoid sinuses. She has never had a nose bleed. The cervical glands at times are slightly enlarged. On excitement or exertion there is, at times, palpitation and tachycardia. Her appetite is good and does not present any gastrointestinal disturbances, except for being somewhat constipated. During the day she voids six to eight times; during the night there is no disturbance. She has never had any convulsions or paralysis.

Physical Examination: Physical examination reveals a well developed and well nourished female, aged 30, weight 130 pounds, whose normal weight is 120 pounds. Temperature 99.4 dropped promptly to normal in fifteen hours; pulse 86; respiration 20; blood pressure 120/60. She is extremely nervous and presents a purpuric rash on the lower extremities. The physical examination is essentially negative except for the lower extremities. Close observation of the skin of legs and feet reveals a generalized involvement of ankles and legs, more pronounced around ankles and lower half of legs, fading toward toes and toward knees, of a rash varying in color from red to purple and spots varying in size from pin point to that of a ten cent piece. The smaller spots remained as such, changing color from red to rusty red, purple, and larger areas to a fading blue, some clearing or paling at center resembling rings or circinate forms. The spots disappeared five to eight days after cessation of menses. Palpation of skin revealed the surface to be perfectly smooth and uninterrupted, the spots to be intracutaneous, and would not blanch or disappear on pressure. There was no edema in any area. At night, especially when the limbs were covered completely, due to increasing warmth, there was noticed a tendency to itching. It seemed quite evident from the above that in this series of cases the cutaneous manifestations are hemorrhagic in nature.

Vaginal Examination: Vaginal examination presents a normal vagina; apparently normal cervix; normal size uterus; right adnexa normal, the left tube seems normal, the left ovary, although not fixed, appeared to be definitely more painful to the touch than the right.

Laboratory Findings: Basal metabolism rate 5.7 per cent. Urinalysis normal. Blood examination: red blood cells 5,200,000; leukocytes 6,250;

SM 44, LM 8; N 48; platelets 217,000; hemoglobin 75; coagulation time 2 minutes, 50 seconds; bleeding time one minute, 40 seconds; blood calcium 10.6 mg. per 100 c.c. of blood. Blood chemistry: N.P.N. 24.9; urea nitrogen 12.4; uric acid 2.39; creatinine 1.4; dextrose 100. Blood Wassermann negative. Fragility test: Minimum .425; maximum .325; capillary test negative (arm band).

DIAGNOSIS

The following points are to be considered in establishing the diagnosis of menstrual purpura:

1. Occurrence of a distinct intracutaneous hemorrhagic rash, recurrent, during or related to the menstrual periods, usually more or less bilateral and usually limited to the lower extremities. Does not disappear on pressure.

2. The rash is usually associated with a scanty menstrual flow.

3. There is a definite decrease in the number of platelets, averaging approximately 200,000 per cubic millimeter of blood, without any noticeable change in the bleeding and coagulation time.

4. Other blood analyses do not present noticeable variations from the normal.

5. There has been a predominant nervous element in every case.

6. No tendency to spontaneous bleeding from mucous membranes. It is noteworthy to mention the age incidence of this series as varying between 18 and 30 years and that on the average one out of no less than every 500 patients presented the above symptoms.

DIFFERENTIAL DIAGNOSIS

(a) Essential Purpura. (Thrombocytopenic).

1. Spontaneous bleeding from mucous membranes and into any tissue.

2. Menstruation usually profuse.

3. Platelets usually decreased much below 100,000 per cubic mm. of blood. (In the cases I have examined they have numbered less than 50,000).

4. Marked prolongation of bleeding time.

5. Coagulation time only slightly prolonged.

6. Degree of anemia greater, but depends on amount of blood loss.

7. Purpuric rash not related to menstrual periods and may occur on any part of body.

Minot⁵ reported a case of intermittent menstrual purpura hemorrhagica in 1936, but this case can be easily eliminated by bearing in

mind the points to establish a diagnosis of menstrual purpura.

(b) Erythema Multiforme.

An acute inflammatory disease presenting macules, papules, nodules, and sometimes, vesicles and bullae, which usually occur on extremities, upper or lower or both. Lesions are bright red in color, annular, disappearing on pressure, and may assume a dark or purple color. They are not hemorrhagic from the onset, are not altogether macular, and are inflammatory.

(c) Dermatitis Dysmenorrheica:⁶

The changes in the skin are serous exudations with superficial necroses which heals underneath crust formation with or without scarring or pigmentation. The distribution is usually symmetrical, and usually occurs on face, but may occur anywhere except hairy regions. The rash may coincide with, or occur independent of menstrual periods, but observed only in patients with dysmenorrhea. The lesions subside after the abnormal genital function is corrected.

(d) Erythema:

Morbid redness of skin may occur in diffuse or circumscribed areas usually on cheeks, forearms and thighs.

(e) Acne:

Small, pink, papules, or pustules may occur on face, back and chest, especially at puberty.

(f) Ecchymoses:

Areas of extravasation of blood, causing bluish discoloration of skin, not unlike that caused by contusions, may appear on chin, lips, face, thighs and at times on legs, usually one or two areas is all that is seen at a time.

(g) Herpes:

Small vesicles, in clusters with crust formation, that are very painful, may occur on genitalia, face, lumbo-sacral region, buttocks and thighs.

(h) Urticaria:

Smooth, elevated patches or areas, which are usually whiter than the surrounding skin, and may be rose color, attended by severe itching, may occur on any part of the body. May

be due to menstruation, emotional, or some gastrointestinal disorder.

(i) Angioneurotic Edema:

Edematous patches arising as result of vasomotor disturbances, most usually seen at menopause. Most commonly occur on lips, eyelids, face, hands, and rarely, vocal cords.

TREATMENT

Treatment is directed along the following lines:

1. Rash. The rash is considered first because this is the primary reason the patient consults the physician. Whole blood, 10 to 20 c.c. is given intramuscularly every day for four days, then every other day for four times which usually suffices for disappearance of the rash but in the event the rash has not completely disappeared at this stage, twice weekly should be sufficient. Locally, calamine lotion (U. S. P.) applied as a liquid powder or carbolized vaseline applied three or four times in 24 hours will relieve the itching. As a general rule, however, this itching is of minor importance. Rest in bed is absolutely essential until rash has disappeared.

2. Establishment of a normal menstrual flow is the most important. To establish a normal menstrual flow, in 1930, in presence of a normal blood picture, I knew of only desiccated thyroid to prescribe. This had its disadvantages in that it frequently causes headaches, loss of weight, and was unreliable, but when prescribed in individualized doses, it still remains as one of the most proficient drugs.

The next seven years unfolded much knowledge previously unknown, in the endocrine field. As a result, I find the best routine for the establishment of a normal menstrual flow for such cases, is as follows:

(a) Supplemental therapy, based upon hypofunction of the ovaries, by use of theelin and corpus luteum extract. During the first fifteen days of the intermenstrual period, theelin is given every third day to produce primary congestion of the endometrium. From eighteenth to twenty-fourth day corpus luteum extract is given every day to produce actual hemorrhagic secretion of endometrium. Usually a normal menstrual flow occurs about the twenty-ninth to thirtieth day of the intermen-

strual cycle. If it does not, then it is best to repeat the entire process one or two more times. If, after the above procedure has been followed, normal menstruation fails to occur, one would feel that:

(b) Stimulation therapy by use of anterior pituitary gonad stimulating hormone is indicated.

Feeling, then, that the anterior pituitary lobe has failed to supply sufficient stimulus to proper development of follicles with subsequent development of endometrium, the following plan is therefore suggested:

Theelin is used in the first fifteen days of the intermenstrual cycle, as above indicated in (a) then using anterior pituitary gonad stimulating hormone for eight to ten consecutive days, begin about the eighteenth day of the intermenstrual period.

At times I have felt inclined to add small doses of desiccated thyroid two or three times daily to aid further in establishing the endocrine balance by raising the basal metabolic rate.

I have never found it necessary to continue the above routine longer than three complete intermenstrual periods. Prolonged and continuous estrin therapy may lead to endometrial hyperplasia or inhibit pituitary activity⁴.

3. Nervous phenomena. This can be overcome by assuring the patient and all concerned, of a happy outcome, for they usually think the disease is essential purpura and that there is little or no hope for cure. Drugs that are likely to produce a rash are contraindicated. Luminal is recommended but it is not necessary to continue it longer than three or four weeks, for I believe that the corpus luteum extract acts favorably to suppress the nervous phenomena exhibited in these cases in a similar manner as it does to suppress the nervous vasomotor phenomena that occur during menopause. Calcium may be of value.

4. Foci of Infection: A careful search for foci of infection should be made and all eradicated as soon as the condition of patient permits.

5. General well being of patient is concerned with proper sleep; freedom from worry and mental strain; proper digestion of whole-

some food at regular intervals; overcoming constipation; alcoholic beverages, tobacco, tea, coffee, and spiced foods, are forbidden.

Stillér³ in 1877, Schramm³ in 1878, looked upon skin eruptions during menstruation as being brought about in some reflex manner by menstrual phenomena. Pauli³ in 1880 observed eruptions in amenorrhea and considered them to be a species of vicarious menstrual manifestations.

Menstrual purpura should not be considered as typical vicarious menstruation since the intracutaneous extravasation of blood does not completely replace the monthly menstrual flow.

Deposition of pigment in the skin (breasts and face principally) during pregnancy, the growth of hair about the genitals at puberty, all indicate that the function of the reproductive organs is linked in some way with the activity of the skin³. Gynecologists and obstetricians are continually encountering various skin conditions in association with the menstrual function.

It is interesting to note that in all of these cases the purpuric rash became demonstrable after a distinct decrease in the menstrual flow became evident. Modern thought of the role of the internal secretions in the causation of menstruation tells us that the skin eruptions are in some unknown manner brought about by the action of these internal secretions³ either from the ovary or of other internal secretory glands. With the normal menstrual flow, the function of the internal secretory organs seems to be fairly well balanced. But with a derangement in the endocrine chain allowing scanty menstrual flow, certain hormone (s) or toxin (s) accumulating and circulating in the blood stream, acts on the capillary walls causing a tendency to increase parenchymatous oozing as do some drugs (ethylene and arsphenamine) without actually causing noteworthy change in the coagulation and bleeding time.

It is also interesting to note that some individuals offer a natural hypersensitiveness to certain circulating hormones, or toxins (or proteins) but inasmuch as these cases, of this small series, have responded very well to therapy directed to establish a normal men-

strual flow (hypo-ovarianism), it seems that a derangement in the endocrine mechanism is most logical.

CONCLUSIONS

1. This brief of five cases of menstrual purpura is presented to indicate a "symptom-complex" rather than a definite clinical entity, for, although the last three cases responded to the plan of therapy outlined, without any recurrence to date, there is much yet to be known of the pathogenicity and treatment of the underlying endocrine derangement, or its definite relationship to an allergic phenomenon.

2. Although the plan of therapy outlined did indeed benefit this small series of cases of scanty menstruation, one should be ever cautious of prolonged estrogenic therapy in more severe forms of endocrine disturbances in which menstrual derangements present predominant symptoms.

3. If this brief does nothing but to stimulate reports and further study of similar cases, it will have fulfilled its purpose because of the rarity of similar cases in literature.

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DISCUSSION

Dr. James K. Howles, (New Orleans): Dr. Smith is to be complimented on this excellent presentation of such an unusual cutaneous manifestation. The distribution of these lesions and their occurrence would seem to necessitate the elimination from a diagnostic standpoint, a toxic dermatosis, probably of the erythema multiforme group. Frequently one finds such an eruption limited to the areas just described by the essayist. The elimination of erythema multiforme seems even more necessary in view of the normal blood findings in this case, which, while possible, are indeed unusual in the late cutaneous eruptions associated with blood dyscrasias.

The essayist stated that focal infection had been ruled out. I was glad he mentioned that point, as abscessed teeth, sinuses and tonsils are so frequently associated with the purpuric eruption and probably play a role in their etiology.

I am invariably reminded of the petechiae of the skin which are found early in bacteremia and septicemia, such as meningococcic meningitis, when I see a purpuric eruption and firmly believe that coccic foci should be thoroughly searched for in such cases.

Regarding the autohemic injections, that particular form of foreign protein therapy is quite useful in most toxic dermatoses. It is a safe and relatively mild form of foreign protein therapy. In discussing it with students I usually compare the reaction to that obtained by extravasation of blood into the periorbital tissues in cases of ecchymosis caused by trauma to that area, such as a black eye.

While I am aware of the rarity of this condition I wish Dr. Smith would try, on his next case, administering merely the autohemic injection and purposely omitting the supplementary therapy to see the results which, if favorable, would tend to confirm the toxic etiology.

Dr. Smith, (In closing): The few cases recorded of this type do not permit of much argument toward establishing a definite clinical entity. It is true that erythema multiforme must be considered but I believe this can be eliminated by referring to the points that characterize this group.

The use of the blood injections is primarily to cure the rash promptly and has nothing to do with establishing a normal menstrual flow, this being done by the endocrine therapy outlined. No recurrence of the rash has been noted after normal menstrual function was established.

TOXIC EFFECTS OF CARBON DIOXIDE*

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Sir James Simpson in one of his papers in 1856 said, "Carbon dioxide is usually recognized by toxicologists as a very powerful narcotic poison when inhaled in sufficient quantity." He pointed out as a practical proof of

this statement the following situation. The walls of the Grotto del Cane near Naples are said to emanate steam and carbon dioxide in sufficient quantity to form a stratum of carbon dioxide near the floor, in which dogs are either anesthetized or thrown into convulsions and finally asphyxiated, while their masters, breathing the lighter, purer air above, are unaffected.

It is my desire to call to your attention a condition which is all too rarely appreciated by present day clinicians. For want of a better name, it may be referred to as carbon dioxide poisoning. An anesthetist's interest in the subject is perhaps logical, since many, if not most, of his difficulties with inhalation anesthesia originate from interference with the normal transport of oxygen, carbon dioxide, and the anesthetic agent to and from the cells of the central nervous system. A knowledge gained through an experience of over twenty years as an anesthetist, leads me to discuss the subject. To illustrate the fact that carbon dioxide may be a poison, the following extract from a letter written by a former undergraduate student bears witness. He writes:

"The patient was a well developed girl of fifteen who entered the hospital with a chief complaint of tenderness localized at McBurney's point. Her temperature was 101.8° F., her pulse was about 85, and respirations 20. Chest examination was negative. An appendectomy was advised. To produce anesthesia, I employed nitrous oxide induction followed by ether, with the absorption technic. The machine did not absorb carbon dioxide very well at any time. The anesthesia was well established with ether, and the operation begun, the patient having excellent color, respirations about 26, pulse 90, pupils small and extrinsic muscles of the eyeball paralyzed, when she began to have small constant twitchings of the face. A short time later there appeared a small clonic body convulsion. I thought of anoxemia as a cause even though respirations were not depressed, pupils small, pulse good and color good. Oxygen was administered, ether was deepened, then abandoned, then reapplied and various other procedures tried in an attempt to relieve the situation. These efforts included giving a lot of carbon dioxide because of possible alkalosis. The convulsions continued, getting steadily more violent, her pulse rose to 120, and her temperature obviously increased. A half hour after the onset of the convulsions she died. This case has been widely

*Presented before the First New Orleans Graduate Medical Assembly, March 11, 1937.

†From the Department of Anesthesia, Medical School, University of Wisconsin. The investigation was supported in part by the E. R. Squibb & Sons' Research Fund.

discussed among our hospital staff members, and no adequate explanation offered. The surgeon says it was a case of too much ether, our anesthetic technician believes it to have been anoxemia, and the pathology department, after a complete postmortem examination including the brain, concluded that it must have been asphyxia, largely because of essentially normal findings."

In answering the letter, his attention was called to former instruction in regard to the toxicity of carbon dioxide, referring to his own statement that the apparatus used "did not absorb carbon dioxide very well at any time," that the patient was exactly the type likely to be hypersensitive to carbon dioxide, and that this gas had actually been used to treat his patient after toxic manifestations had begun. The reply in part was as follows:

"Yes, I should have known better about the whole matter. I now remember how, just before the patient expired, I had given her a constant stream of oxygen by way of the direct shunt valve, hardly having her rebreathe any exhaled gases, because that seemed to be the only thing which kept her at least partially from failing."

He then adds a case report which illustrates the toxic qualities of carbon dioxide in other than anesthetic circumstances.

"Early this morning, I was called to the ward to see a premature infant that was blue and hardly breathing in spite of a steady stream of carbon dioxide 5 per cent and oxygen 95 per cent or carbogen. It gave occasional twitching gasps. This time I recognized carbon dioxide toxemia, so gave lots of pure oxygen at once, and the infant rapidly improved. After being given some saline subcutaneously and one-half hour of pure oxygen, it was crying lustily and in good condition. It seemed spectacular to the nurses how oxygen, not carbogen, was effective.

"In this hospital, I have been able to count fifty carbogen cylinders and only two oxygen cylinders available for therapeutic purposes."

If this man's experience was an isolated instance, it would be of little significance. On the contrary, his letter is one of many received in my office describing fatal and non-fatal cases of carbon dioxide poisoning. It is my belief that atmospheres containing excess carbon dioxide are frequently toxic and often fatal to certain individuals. If illness has interfered with normal metabolism, or if the transport of this waste product from the cells of the body to the environmental atmosphere is

handicapped by biochemical abnormality, by respiratory or cardiac deficiency, or by drug effect, any increase in the tension of carbon dioxide in the atmosphere inspired may prove detrimental.

EFFECT ON NORMAL SUBJECTS

A brief and incomplete review of the literature will refresh our minds as to the effect of carbon dioxide rich atmospheres on normal animals and men. Statements of Haldane and Smith in 1892¹ have frequently been verified that ten per cent carbon dioxide in the inspired atmosphere is the upper limit which can be inhaled for any length of time without stupefaction. This fact had been demonstrated in animals long before 1892. It is, of course, a familiar fact that Hickman advocated surgical anesthesia with this agent during the first quarter of the nineteenth century². Davies, Haldane and Kennaway in 1920³ found that the inhalation by normal individuals of 5.2 per cent to 6.4 per cent carbon dioxide for two hours was followed by headache lasting for several hours after its removal.

Goldstein and Dubois⁴, in 1927, studied the effect of carbon dioxide inhalation by normal individuals. They demonstrated that when the inspired air contains less carbon dioxide than alveolar air, that is, up to 5 or 6 per cent, there is no increase in alveolar concentration. In other words, normally the increased ventilation is able to keep down the alveolar concentration so long as the atmosphere inhaled does not contain an excess over the normal alveolar carbon dioxide. As the level of alveolar tension is reached and exceeded, in the inspired air, the alveolar tension gradually increases until it approximates that of the inspired atmosphere at the end of the experiment. They found that there is a rise in systolic blood pressure with increasing concentration. The extent of the systolic rise, they found to be dependent on the ability of the subject to continue to rebreathe, reaching 60 millimeters and higher before their conscious subjects refused to continue. They also observed a rather extreme change downward and then upward in the diastolic pressure just following the period of inhalation.

In 1929, Leake and I⁵ reported investigations

of the effects of carbon dioxide in which mixtures of this gas with oxygen were utilized to induce anesthesia in dogs. We found, as had many others, that the extreme rise in blood pressure took place with concentrations under 30 per cent, whereas with 30 per cent and over, after the initial rise, the blood pressure often remained approximately normal during periods when there were no convulsions, and that respiration likewise tended to be normal or depressed. As concentrations above 40 per cent were reached, there was definite depression of both respiration and circulation. When a gradual increase in carbon dioxide concentrations to very high levels was displayed to dogs, it was found that both respiration and circulation finally ceased approximately at the same time, rather than in the sequence usually noted with anesthetic agents; namely, a cessation of respiration long before the heart stops. The outstanding finding of their work, however, was the frequent occurrence of convulsions in their animals at some period either during or following the carbon dioxide inhalations. We then attempted to administer 30 per cent in oxygen as an anesthetic agent to three apparently normal women, with the following result. The first was satisfactorily anesthetized for thirteen minutes with no untoward result during inhalation. The second had a convulsion on the operating table, during which the ward nurse appeared in the doorway to ask, "Doctor, what shall I do? The first patient is in a convulsion." The third patient tolerated ten minutes of carbon dioxide anesthesia, which was then changed to nitrous oxide. That evening, none of the three appeared to be the worse for the experience.

Brown in 1930⁶ studied the physiologic effects of concentrations between 5.5 and 12.4 per cent in the inspired air of normal men. He found that when his men began by the inhalation of 10.4 per cent, the maximum period which this could be endured without severe alarm, either by the man himself or by the observer, was two and a quarter minutes. When inhaling an atmosphere of 12.4 per cent, the maximum period was two minutes in one individual only, the others abandoning the effort much sooner. Brown was convinced that 10 per cent was the maximum concentration which

could be inhaled for longer than ten minutes by any individual without loss of consciousness. He noticed, as had many others, that the respiratory rate when inhaling excess carbon dioxide was only slightly increased, the depth greatly increased, and the pulse rate moderately increased. He made the following observations in regard to the increase of minute-volume respiration as determined by measurement of the expired air: 6 per cent CO₂ caused 203 per cent increase in ventilation; 7½ per cent CO₂ caused 225 per cent; 8.8 CO₂ caused 228 per cent; 10.4 CO₂ caused 279 per cent; 12.4 CO₂ caused only 153 per cent.

The sudden decrease in respiratory stimulation above 12 per cent is significant. The influence of high and low oxygen tensions accompanying the carbon dioxide inhalation was carefully checked and found not to affect the results.

In both subjective and objective effects, all workers have found extreme individual variations. Alarming symptoms appeared early in one individual, while the same concentration was tolerated by other individuals. It is evident from the above and other experimental work that excess carbon dioxide inhaled by normal individuals causes hyperpnea, distinct and progressive increases in systolic blood pressure and other alarming signs and symptoms, both subjective and objective, until concentrations above 10 per cent (higher in some animals) are reached, when unconsciousness uniformly occurs. Depression of both respiration and circulation eventually supervenes as the tension is increased. Inhalations of variable concentrations have, in our own hands, frequently been followed by convulsive manifestations.

In all the preceding experiments, the writers have referred to an extreme variability in the reactions found in different normal individuals, both animals and men. This brings up the question as to whether certain diseased states may not have a very definite influence on the sensitivity to the toxic effects. The mechanism by which this catabolic product is eliminated from the body is well recognized to be a complicated one. Within the last ten years, the whole theory of carbon dioxide trans-

port has been revised and is still far from solved. There is, however, evidence here and there in the literature that the effect of diseased states may result in modifying still further individual variability. I have previously referred to the dangers which may accompany rebreathing or the administration of carbon dioxide to persons who are ill^{7, 8}. Many references could be cited of cautions and warnings by clinicians in regard to excessive use of carbon dioxide. Lundy in 1925⁹, in a paper advocating the value of this agent as an adjunct to inhalation anesthesia with ether, says, "From time to time the anesthetist should open the exhalation valve and smell the mixture in the bag. The odor of ether in the bag should never be stronger than the anesthetist himself can tolerate, and the carbon dioxide should never be discernible." In the same paper he says, "Too much carbon dioxide is worse than none and care should be exercised to prevent more than 5 per cent being used. The absorption and dissociation curves of blood and tissues have been found by Peters¹⁰ to vary under certain circumstances. In 1920, he studied the absorption curves and carbon dioxide tension in the blood of normal persons, and those suffering from cardiac dyspnea and from severe anemia. He concluded that, in cardiac dyspnea, there was an impairment of the mechanism for giving up carbon dioxide from the blood; and that in severe anemia, there was a diminished power of absorbing and dissociating carbon dioxide with retention in blood and tissues. In many diseased states, it is reasonable to suppose that further deviation from normal physiologic reactions may result from inhaling even moderately increased tensions.

Since the physiologic mechanism involving the elimination of carbon dioxide is incompletely understood at the present time, it is scarcely worth further consideration in a clinical paper. Certain clinical facts, however, may be enumerated.

HYPERSENSITIVE INDIVIDUALS

In my experience, some infants and children and occasional adults, toxic from acute infections, from dietary deficiency and from other causes, are often hypersensitive. Extremely hot weather, starvation and dehydration have at times seemed to result in greater suscepti-

bility. The toxic manifestations cannot be correlated with a definite concentration of carbon dioxide in the inspired air. Physical signs of harm may occur soon after rebreathing has been instituted, after a half hour or longer of inhalation of carbon dioxide-rich mixtures, or in the period following exposure to such environment. The majority of patients tolerate excess carbon dioxide in their inspired atmosphere, apparently without harm. For this reason, it is all the more important that we be cognizant of the hypersusceptibility of the few if we are to prevent fatalities.

The physical signs which we have come to recognize as related to carbon dioxide disturbances are of two types. First, there is a group of signs in general simulating collapse. The patient may be pale with depressed respirations, often of a quick gasping type accompanied by a grayish pallor. Blood pressure is low, often without a correspondingly rapid pulse rate. Continuance of carbon dioxide administration under such circumstances may fail to produce hyperpnea and result in arrest of respiration. Free breathing without carbon dioxide, by artificial respiration if necessary, is indicated, together with parenteral fluids, oxygen, and external heat.*

The second more common evidence of the effect of excess carbon dioxide is shown in muscular activity. If, under conditions permitting accumulations in the body, the smaller facial muscles begin to twitch, the observer should think of carbon dioxide poisoning as well as of oxygen lack. Excess carbon dioxide in the inspired air should cause increased breathing. Lack of this effect should make one suspicious of toxicity. When facial twitching is first noted, immediate effort should be made to promote elimination. When action is prompt, no further treatment will be necessary. If the

*A somewhat similar picture may appear directly following a period during which an individual has been subjected to an atmosphere too rich in carbon dioxide and must be differentiated from it. It is then probably due to the sudden withdrawal of excess carbon dioxide for which adjustment of the buffer mechanism of blood and tissues has been made. Perhaps the excess carbon dioxide has been blown off more rapidly than it is possible for the buffer mechanism to keep pace.

facial movements are disregarded, a more or less generalized mild convulsive manifestation may follow. * Even then, elimination of the carbon dioxide from the inspired air will,

if the patient continues to breathe, rectify the physiologic disturbance in a majority of cases. Other than the elimination of dead space (rebreathing) and the omission or termination of carbon dioxide therapy, the most logical treatment is the intravenous administration of buffer salts, preferably in hypertonic solution. Barbiturates, intravenously, will stop the convulsion whatever its cause, but if it is due to excess carbon dioxide, such therapy is fundamentally unsound because of the accompanying depression of respiration. Deep ether anesthesia will not remedy the condition and often makes it worse. Any therapeutic procedure is useful that will cause interruption of the ill-chosen technic that has resulted in overdosage. In anesthesia, if contemplated treatment results in the removal of the face mask, the patient gradually expires the gas and recovers. On the wards, patients may not be so fortunate. The administration of a mixture of carbon dioxide and oxygen may be continued in a futile and fatal effort to stimulate a respiratory center already depressed with excess carbon dioxide. Unfortunately, the persistence of a pink color often deceives the physician.

I recognize that there are many causes of convulsions and collapse, unrelated to carbon dioxide. I merely wish to leave the appreciation that illness may so modify physiologic processes as to make a slight increase in the carbon dioxide tension of inspired air toxic to

*When the mechanism of carbon dioxide transport and excretion is better understood, it may be found that excess is toxic solely by reason of its tendency to interfere with oxygen acceptance by the cells. Stated in another way, excess carbon dioxide may reduce the availability of oxygen for cell utilization. The differentiation of muscular twitching or convulsions due to too much carbon dioxide from similar manifestations resulting from lack of oxygen is not always easy. The absence of hyperpnea, when it should logically be present, is often an aid in differentiation. There is some evidence that excess oxygen accompanying excess carbon dioxide actually increases the probability of toxic manifestations.

occasional individuals. Realizing this fact, the physician will be on his guard to prevent the injudicious application of such therapy. The one legitimate therapeutic use of carbon dioxide which has been accepted by all physiologists and clinicians is to increase respiratory exchange.* When carbon dioxide therapy, or the rebreathing of expired atmospheres, is practiced and no increased breathing occurs, take warning. Under no condition of abnormal physiology does nature so quickly restore herself as in the elimination of excess carbon dioxide. On the other hand, if therapeutic endeavor curtails elimination by maintaining a dead space for rebreathing or by adding carbon dioxide to the inspired air from a cylinder, a fatality may result.

CONCLUSIONS

1. Normal response: When the air inspired by normal individuals contains carbon dioxide in excess of that in alveolar air for any length of time, extreme circulatory and respiratory stimulation takes place, later followed by depression of these functions, by unconsciousness and often by convulsions. Normal individuals vary over a wide range in the symptoms and signs caused by a fixed tension in the inspired air.

2. Pathologic states accompanying illness may handicap in the extreme the potential power of buffer adjustment designed to maintain a normal balance of carbon dioxide in the tissues and provide for sufficient elimination of this substance.

3. In a vast majority of cases, the only therapeutic value of the inhalation of carbon dioxide is the production of increased pulmonary ventilation. When hyperpnea does not result from carbon dioxide inhalation, the administration should be promptly terminated.

4. In addition to absence of hyperpnea, other signs of carbon dioxide toxicity are characterized by collapse in certain circumstances and in others by twitching of the small muscles of the face, followed by convulsions.

*Rarely in modern medical practice does one encounter a patient depleted of carbon dioxide because he has breathed too deeply.

5. Treatment of carbon dioxide poisoning consists mainly in providing a free airway with pure oxygen or air (no carbon dioxide) as a respirable atmosphere. If respiration is depressed or arrested, brief artificial respiration, without dead space or rebreathing, may be necessary.

6. Buffer solutions and depressant drugs intravenously are of benefit but are seldom needed if the condition is recognized early.

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ATTENTION—SECRETARIES

This editorial is addressed to the secretaries of the Parish, District Societies and hospital staffs of the State of Louisiana. The Journal Committee has appealed to all secretaries before by personal letters and by word of mouth, asking them to send in to the Journal news items about their particular organization. In response to letters sent to the secretaries of the above organizations last November, three or four co-operated well in sending to the Journal information

as to what was going on in their groups. This represents a very small percentage of the organizations to whom this request was sent.

The Journal is the official organ of your State Society and its constituent divisions. As the secretary of any of these divisions of the State Society it should be part of your function to keep the Journal informed about news matters in your Society.

The state Journal should be not only the recorder of the scientific presentations given before the State Society and before other branches of the organization but it also should contain a considerable amount of local news. There is no possible way of obtaining this news except from one of the doctors in the district, and the logical doctor should be he who is honored by election as secretary to his society. The doings and the happenings that take place from time to time in a parish society are of interest not only to the men intimately connected with the parish but to the friends of the members throughout the state. They are interested in knowing what Dr. Blank is doing, or how the parish society is functioning, or what the local hospital is doing at its monthly meeting. News items such as these add materially to the state Journal, but they cannot be obtained unless some one man will have sufficient interest in his local affairs to report them to the editor of the Journal.

The Journal Committee is extremely anxious to have the cooperation of the members of the organization; it feels that its Journal can be made more readable and of greater interest than now if it can record what is being done throughout the state by the physicians of the State Society. The Committee is desirous of publishing a journal which will be warmly greeted the first of each month.

It is earnestly urged that you, as secretary of your local society or hospital or staff send to the Journal such news items as you may be able to obtain before the twentieth of the month in order that they may be incorporated in the Journal that will appear ten days later.

SOME NOVEMBER MEETINGS

During the latter part of November there will be held in New Orleans several meetings of general interest to doctors of the State Med-

ical Society as well as to physicians in neighboring states. The first of these will be a series of clinics and demonstrations one week before the Southern Medical, given under the auspices of the Medical School of Tulane University. As part of this program there will be incorporated on November 22-23 a Tuberculosis Institute which will be given in collaboration by the Orleans Parish Medical Society, the Tuberculosis Committee of New Orleans and the Louisiana State Tuberculosis Association. Following this meeting the Southern Medical will start on Monday, November 29. These meetings will give ten days to two weeks of intensive medical work which should be well attended.

Preliminary announcements of the Clinics and Demonstrations and the Tuberculosis Institute will be found in the section devoted to the Louisiana State Medical Society and the Orleans Parish Society.

I. I. LEMANN

The sudden and tragic death of Dr. I. I. Lemann terminated the career of one of the best known physicians in the city. Lemann had been intimately connected with New Orleans' medical and social activities the greater part of his life. A member of a prominent Louisiana family, Lemann in his early life migrated to New Orleans where he obtained his education except for a year spent at Harvard. He early became identified with the Charity Hospital and with Touro Infirmary and in both of these institutions he still kept his connection at the time of his death. At Charity Hospital he was made a consulting physician after years of active work. At Touro he was head of the medical service. Lemann was known to a large number of Tulane graduates who, at some time or another in their course, had the opportunity of obtaining his sterling instruction. He was a member of several of the elect national medical societies. He was known all over the country for his work in diabetes and for his interest in the diabetic.

Lemann was socially minded to a high degree. He was interested in the welfare of the poor people of the city and he was active in furthering their interests. He was also interested in advancing the negro and he did much

to promote the education of the negro physician.

Lemann's death is a loss not only to the medical community and to Tulane Medical School but also a loss to New Orleans as a whole and more specifically to those New Orleanians who were his devoted and grateful patients.

MIGRAINE

A short time ago it was pointed out that pruritus ani is one of those minor ailments which cause the patient a great deal of distress and which sometimes is very difficult to cure. Another disorder at the other end of the human body, namely migraine, is one with which the patients may be troubled all their lives and obtain very little relief from physicians. One of the reasons for this, of course, is that there has never been any etiologic agent definitely incriminated in the causation of these headaches. They apparently are due to a variety of causes. As pointed out by von Storch¹, the condition apparently has a multiple pathogenesis but a common mechanism, the result of various underlying pathologic processes. Some of the hypotheses concerning the etiologic agents include such factors as toxic vasomotor substances, endocrine imbalance, oculo-cerebral reflexes, allergic disturbances and what not.

The migrainous headache has associated with it certain features. It is usually, but not necessarily, limited to half of the head. Visual symptoms, such as scintillating scotomas are common. The onset is frequently characterized by nausea and vomiting, and the severe visual symptoms, plus the extreme head pain, are at times enough to incapacitate the patient for hours or even for several days.

One of the interesting developments in therapeutics in the last few years has been that which has to do with the curing of this syndrome with ergotamine. Originally employed with a definite purpose it has been shown that the hypothesis upon which its use was based was incorrect but the drug was empirically discovered to be of immense value in the relief of the head pain and the other symptoms. A

1. von Storch, T.J.C.: The migraine syndrome: Comments on its diagnosis, etiology and treatment, *New Eng. J. Med.*, 217:247, 1937.

possible explanation of the curative action of this drug is that of Wolff who has shown that this drug, in therapeutic doses, constricts the temporal and middle meningeal branches of the external carotid artery but has little or no effect upon the main branches of the internal carotid. It is possible the remedial action may be due to active vasoconstriction of the dural and temporal vessels, relieving the headache in some not yet definitely proved manner. Von Storch reports on more than 200 selected patients who had the migraine syndrome developing as result of multiple factors. Ergotamine was given to these patients in various sized doses with superb results. He recommends from 1-5 mg. of ergotamine tartrate by mouth, followed each hour by 1 to 2 mg. not to exceed

a total intake of 10 to 12 mg. In the more severe cases the hypodermic injection of $\frac{1}{4}$ to $\frac{1}{2}$ mg. is usually effective in 15 minutes to three-quarters of an hour. Other methods of administration are useless and daily preventive dosage has been shown to be of little value. To relieve the nausea and vomiting atropine is probably the most satisfactory drug.

The use of this medication represents a real relief to sufferers who have had the agony of migraine most of their life. It does not work in every instance, needless to state, but to the great majority of patients it does afford a temporary cessation of their discomfort and a symptomatic temporary cure. It hardly seems necessary to add that the drug is contraindicated when there is coronary or peripheral vascular disease of the obliterative type.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC
NEW ORLEANS

At the meeting held in September Doctor J. A. Gaudet presented the following paper:

THE ORACULAR BLOOD CELLS

One of the most potent aids, and the commonest, except for urinalysis, in the armamentarium of the medical man is the blood cells and the manner of their reactivity to an affront. Both quantitative and qualitative variations occur, the latter presenting, by consensus of authoritative opinion, by far the more consequential data. It has been said, "I would emphasize again and again that if any one count is to be made it should be the differential,—there are few pathological conditions upon which it does not throw important light¹". It is true in a general way that quantitative values are an expression of the character of an invasion, yet, after all, a random aliquot of blood bears only an insight into the quantum of the aggregate and many factors, both extrinsic and intrinsic, veer them to actual inaccuracies; furthermore, occurrences of a sluggishness or failure of the defensive mechanisms present wherein absolute results do not pace the intensity of the invading process. Apropos to the leukocytes, fluctuations of certain varieties (monocytes, eosinophiles), could hardly register since their original incidence is so low, and again, it was long ago observed that good resistance might react to light injury by an effusive reply and, vice versa, that poor response might reply to a severe process. The attitude of today is to regard quantitative expressions as largely questionable and often mis-

leading when considered alone, but as being usable in the formulation of indices or as one of a series.

Primarily, the distinction of erythrocyte and leukocyte offers; either reacts independently of the other, and the numerically minor cell, the leukocyte, is the major cell from the diagnostic viewpoint. The erythrocytes, 500 to 1,000 times in the majority, tend to constancy; so that usually a knowledge of their hemoglobin content and their tinctorial and morphologic characteristic suffice to reveal their systemic caliber. Polycythemia (their increase) is unimportant² and relative, and oligocythemia (their decline) and oligochromemia (reduction of hemoglobin) occur together but not always to the same degree. Normally circulating they evince as homogeneous discs, showing monochromatic (acidophilic or eosinophilic) staining affinities and a general similarity. Abnormally, deviations present which are typical of some particular condition; their hemoglobin content declines (achromatic "pessary forms"); their size and shape change (anisocytosis and poikilocytosis); their tinctorial characteristics assume peculiar traits (polychromatophilia and "punctate basophilia"); and their structure displays untimely conformations and unusual manifestations (erythroblastosis, reticulocytosis and fragility).

The leukocytes, normally ranging in a "rhythm" within limits of 4,000 to 9,000 cells per cu. mm. of whole blood³, are vividly reactive; their abnormal presentations yield the brunt of helpfulness exhibited by blood cell examinations. Leukopenia⁴ (their absolute decrease) is not of such practical utility, occurring in severe infections wherein the

body defenses have been overwhelmed; in conditions as typhoid, paratyphoid and undulant fever, early tuberculosis and influenza—all separate of coccal involvement—in malaria, measles, mumps; in agranulocytic angina; in established anemias; in poisoning by benzol, lead, radium and roentgen ray; and in certain physiologic states as malnutrition.

But leukocytosis, using the term to include transient, chemotactic and absolute increase of any variety of leukocyte is common and of unique import. Chemotactic agents that occasion the leukocytoses are critical, that is, certain ones call forth a particular white cell variety and are repellent or neutral to another, and it is unusual for more than one variety to be simultaneously similarly affected, so that the seasoned hematologist is able to approximate the process set up by studying the leukocyte reaction. In a large majority of instances the polymorphonuclear (P M N) neutrophile is the selected respondent, and the response is typically immediate, active and florid; it has been likened to the mobilization and dispatch of soldiers for first line defense service. Coccal infections are almost wholly responsible. Minor causative agents are malignant conditions (50 per cent of malignancies), postoperative states, post-hemorrhagic conditions and toxic and drug induced states; and there is a large group of responses produced by physiologic conditions such as physical exercise, mental activity, digestion, or pregnancy, so called neuro-vegetative reactions.

A typical neutrophilia from our files is cited for purposes of illustration. Total leukocytes, 16,750; neutrophiles, 80 per cent.

Neutropenia (the absolute decrease of neutrophiles) is the usual type of leukopenia and has been above discussed. Example: agranulocytic angina—total leukocytes, 1,000 with 15 per cent neutrophiles.

Lymphocytosis (lymphocytic leukocytosis) implies an absolute increase of lymphocytes, and percentage or "relative lymphocytoses" are probably instances of neutropenia. Marked augmentation occurs in three conditions only; lymphatic leukemia, whooping cough and infectious mononucleosis (glanders), examples of which are: Lymphatic leukemia, total leukocytes, 90,000 with 95 per cent lymphocytes; whooping cough, total leukocytes, 30,000 with 70 per cent lymphocytes; infectious mononucleosis, total leukocytes, 15,000 with 80 per cent lymphocytes.

Milder increases have been ascribed to bacillary infections, states of hyperactivity of the ductless glands and lymphatic tissues and anemias, chronic and subacute conditions of subdued nature. Today conservatism is exercised towards "lymphocytosis"; since normal variance has been found to be quite wide, percentages as low as 15 and as high as 65

have been noted in healthy adults, and Osgood⁵ reports 48 and 38 averages for children and adults, respectively. Children, during the first year, present about 55 per cent of lymphocytes which, gradually, approaches normal adult values after the eighth year. Jones and Crocker⁶ formulate the following for the computation of lymphocyte values in children: Multiply the year of age by 3 and subtract from 55. Thus, at six years of age there should be $55 - (6 \times 3)$ or 37.

Lymphopenia (decrease of lymphocytes) is secondary to neutrophilia and accompanies leukocytic leukemia.

Eosinophilia, the absolute increase of the eosinophilic leukocyte, characterizes:

1. Infestations with parasites as trichinosis or uncinariasis.
2. Allergic states as bronchial asthma, hay-fever, or urticaria.
3. Skin diseases as scarlet fever, scabies, psoriasis, or pemphigus.
4. Myelogenous leukemia, Hodgkin's disease.
5. In tuberculin reactions.

This variety of leukocyte has a normal incidence of 1-4 per cent; a rise of 6-7 to 20-30 constitutes usual pathology but occasionally instances of extreme increases to 80 per cent and over have occurred. It has been called the most sensitive of the leukocytes and is remarkable as a prognostic aid. Simon emphasizes⁷ "—their return in conditions in which they have previously been absent or diminished is a good omen". Its response to acute infection is notable in that it declines in or disappears from the circulation (eosinopenia) during the upgrade of the process (Simon's septic factor), and awakens at the "dawn of convalescence phase". Illustration: total leukocytes, 8,000 with 34 per cent eosinophiles.

Leukocytoses of the monocytic group, embracing cells of the endothelial, large mononuclear and transitional classification, are not so conclusive as diagnostic aids. In the circulation these cells are active scavengers and prompted the designation "macrophages" from Metchnikoff in his theory of immunity. They are common to typhoid fever, active tuberculosis and endocarditis, and the active stages of protozoan infection. A sudden increase (monocytosis) inaugurates the swing of the shift from left to right in acute infections, following the monocytopenia (decrease) or absence of monocytes which marks the upgrade of infection.

Basophilia or basophilic leukocytosis is the least helpful of the leukocytoses; it is found in myelocytic leukemia. Basopenia approximates eosinopenia and monocytopenia.

Our knowledge of leukocytic behavior has accumulated markedly since the dawn of the present century; the neutrophiles have furnished the bulk

of study and their reaction to infection has been stressed. In 1905 Sondern⁸ and a year later, Gibson⁹ established that the neutrophilic percentage tended as an insight into the character of an infection; that the degree of leukocytosis spelled the body or host response, and that their proportionate relationship suggested an index of resistance, an important aid to diagnosis and prognosis.

Though somewhat clarified of clumsiness by Wilson¹⁰, it was not until 1919 that Walker¹¹ promulgated his "polymorphonuclear index" as the formula T-(P-60) in which T represents the thousands of the total white cell count, P, the neutrophile per cent, and 60 a numeral arrived at by mathematical computation,—thus our case showed 20,000 leukocytes and 85 per cent neutrophiles, or 20-(85-60) or 5, a plus index of fair omen. In 1927, Jones and Crocker¹² advanced their "lymphocytic index" which parallels Walker's index closely but is more useful in that it includes lymphocytic variations and chronic inflammations. Accepting 20 as the lowest normal lymphocyte percentage, for every drop of 1 per cent of lymphocytes in the differential below this figure there should be a rise of 1,000 in the total count; thus in our above case there were 15 per cent lymphocytes (a fall of 5) and the total count should have been 15,000; since it was 20,000, the index was plus 5. Shadowed by the brilliancy of today's appreciation of cell morphology, indices of resistance of this type have wavered in interest; doubtless they will be revived and more careful consideration will be conceded them.

With Arneth in 1904, there began a system of study based on neutrophile nuclear structure and development which evolved to our present conceptions. Credit for popularizing this work is due to Victor Schilling for it was his 1911 treatise which opened to the world a hematologic technic which has yielded much; it has placed in our hands a simple and usable mirror which reflects the biologic reactions of the body to acute infection.

The Schilling technic divides neutrophiles into four sequential classes¹³ in the order of their development, nuclear morphology being the differential characteristic. It delineates a usual circulatory PMN hemogram as:

	Stabs	Segmenters
Myelocytes	Juveniles (Rhabdocytes)	(Lobocytes)
0	0—1	3—5
		58—66

Infection recruits the younger forms. A fictitious separation is imagined between the stabs and the segmenters; a flux of young forms to the left constitutes a left shift, and of mature forms to the right, a right shift. Stab cells (the degenerative blood picture) on the increase denote the start or advance of infection, and juvenile cells appearing and increasing (the regenerative blood pic-

ture) indicate bone-marrow stimulation or resistance, and the "battle phase" is on. Progress of the "shift" in either direction implies the status of the battlers.

Coincident to the rise of the neutrophiles is a fall of other leukocytic elements: The lymphocytes, monocytes, eosinophiles and basophiles recede in or leave the circulation until resistance has been overcome. Should the invasion be extinguished, the lymphocytes assume the upgrade and the "phase of cure" is apparent as the neutrophilia subsists. Occurring prior to any right shifting, a sudden shower of monocytes, the "phase of defense", is evident, and the recessed eosinophiles "perk", heralding the "dawn of convalescence".

An ordinary infection¹⁴ is implied by 15,000 or more leukocytes showing a 1:2 immature to mature PMN ratio (Schilling index of 1/2) and a decline of other leukocyte varieties. A good prognosis is indicated by a declining total count (below 15,000), by an immature to mature ratio of 1:5 PMNs, an increasing lymphocyte percentage, 2 or 3 eosinophiles, and disappearing "toxic neutrophiles". A severe infection with a poor prognosis is suggested by a persistent "left shift" with a total count of 30,000 and 90 per cent neutrophiles (95 per cent neutrophiles is said to be the limit of recovery), a fall of lymphocytes to less than 10 per cent, a 1 plus: 1 immature: mature cell ratio, many toxic granule laden neutrophiles and absence of eosinophiles. Impending death is foretold by a flooding of the circulation with myeloid elements.

Modernly, as Gradwohl expresses it¹⁵: "Hematology has come into its own and must be used with more understanding and intelligence than has been the case in the past." Medical and surgical diagnosis and procedure, and even, prognosis has been cleared of conjecture and been given immeasurable support.

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FRENCH HOSPITAL

A regular meeting of the French Hospital staff was called to order on September 17, 1937, with Dr. J. B. Gooch presiding, in the absence of Dr. R. L. Gordon.

The scientific program, which consisted of a symposium on pulmonary tuberculosis, was then presented. Dr. L. A. Monte presented the medical aspect of this disease, stating that early diagnosis should be emphasized and that one should be tuberculosis conscious. Early symptoms are often considered trivial or due to other causes. Diagnostic signs are roentgen ray evidence, hemoptyses, and pleurisy. The early symptoms of tuberculosis are fatigue and coughing; night sweats and fever occur in advanced stages; hoarseness and unexplained aphonia should be considered suggestive of tuberculosis. Gastrointestinal symptoms occur rather late in the disease. The early findings are usually above the level of the third rib anteriorly or fourth dorsal posteriorly. The diagnosis, on physical signs, is 25 per cent accurate in early stages. Treatment should consist of: (1) Rest, food and fresh air; (2) collapse therapy.

Dr. F. F. Boyce opened his paper on the surgical aspect stating that surgical treatment is the most important surgical advance of the century. Surgery aims at collapse and immobilization. Unilateral lesion is the best indication for surgery. In the operative series, the first (1) is on the phrenic nerve, paralyzing the diaphragm. This

is the method of choice, if pneumothorax is not efficacious.

(2). Scalemotomy, gives about 25 per cent efficiency in apical lesions or severe bilateral lesions.

(3). Extra pleural pneumolysis is rather dangerous if over thin walled cavity.

(4). Thoracoplasty divides adhesions when pneumothorax is not feasible because of adherence to parietal pleura. Supposed to be of benefit in about 66 per cent of patients operated on.

(5). Extra pleural thoracoplasty, in most early operations, failed in not being extensive enough to secure complete collapse. These operations carried great shock.

At present operation is done in stages, taking two or three ribs at a time. The periosteum is treated with 10 per cent formalin to prevent regeneration (Alexander). The upper ribs are resected first, because stages can be stopped at any time. The inferior angle of the scapula is removed to allow it to fall in. The Trendelenberg position is used postoperatively, to prevent gravitation of fluid to lower part of chest cavity. This is indicated when other measures fail and if the lesion is unilateral and if the patient is between 15 and 45 years of age and a good operative risk.

The contraindications are: Bilateral lesion; low vital capacity, under 100 c.c.; cardiac or renal disease. A secondary thoracoplasty is usually needless because of the nature of the cavity.

The pathologic aspect was next presented by Dr. W. H. Harris, which consisted of lantern slide demonstration of various lesions of childhood and adult tuberculosis from early to cavitation stage and differential aspects from syphilis of lung.

Dr. L. J. Menville closed the program with the roentgen ray aspect, showing a chart by Lawrason Brown with relative importance of physical laboratory and roentgen ray signs and roentgen ray plates showing the various lesions.

R. E. Rougelot, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

OCTOBER 4 Board of Directors, The Orleans Parish Medical Society, 8 p. m.

OCTOBER 5 Eye, Ear, Nose and Throat Staff, 8 p. m.

OCTOBER 5 Pathologic Conference, Hotel Dieu, 8:15 p. m.

OCTOBER 6 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

OCTOBER 6 Mercy Hospital Staff, 8 p. m.

OCTOBER 6 Tulane Medical Clinic Staff, 8 p. m.

OCTOBER 8 French Hospital Staff, 8 p. m.

OCTOBER 11 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.

OCTOBER 13 Touro Infirmary Staff, 8 p. m.

OCTOBER 15 I. C. R. R. Hospital Staff, 12 Noon.

OCTOBER 18 Hotel Dieu Staff, 8 p. m.

OCTOBER 19 Charity Hospital Medical Staff, 8 p. m.

OCTOBER 20 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

OCTOBER 20 Charity Hospital Surgical Staff, 8 p. m.

OCTOBER 21 Eye, Ear, Nose and Throat Club, 8 p. m.

OCTOBER 25 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.

OCTOBER 26 Baptist Hospital Staff, 8 p. m.

OCTOBER 27 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

TUBERCULOSIS INSTITUTE

On Monday and Tuesday November 22-23 there will be held a Tuberculosis Institute at the Hutchinson Memorial Building under the auspices of the Tuberculosis Committee of New Orleans, the Orleans Parish Medical Society and the Louisiana State Tuberculosis Association. This Institute will be conducted by Dr. Fred H. Heise of Trudeau, New York, and Dr. John B. Hawes of Boston. In the afternoon there will be clinical demonstrations. In the evening Dr. Heise and Dr. Hawes will talk each night on the diagnosis and on the treatment of tuberculosis. Each man will talk about an hour. On the second evening opportunity will be given for questioning the speakers.

Dr. Heise is the Medical Director of Trudeau Sanitarium, which position he has held since 1929. He is Chairman of the Diagnostic Standards Committee of the National Tuberculosis Association and is a member of the Research Committee of this same organization. He has served as Director and has been President of the American Sanatorium Association. At the present time he is President of the Saranac Lake Medical Society. Dr. Heise has been a prolific contributor to the literature on tuberculosis. He has written some 76 papers on this subject, indicative of his activity in the study of the disease. His book, "One Thousand Questions and Answers on Tuberculosis," is used throughout the country. Dr. Heise is unquestionably one of the outstanding phthisiologists in the country and his presence in New Orleans should be a great stimulus to tuberculosis activities in the city and state.

Dr. John B. Hawes was formerly Director of the Clinic for Pulmonary Diseases at the Massachusetts General Hospital and on the staff of the Harvard University Medical School. He is now Director of the Rutland Sanatorium and consultant in diseases of the lung at the U. S. Veterans' Bureau. Dr. Hawes has been a busy writer on diseases of the chest. His writing is not confined only to scientific monographs on tuberculosis and pulmonary diseases but the small books he has written for the laity have been extensively used. "You and the Doctor," published in 1929, was extremely well received. "Talks on Tuberculosis," 1931, has just been revised and a new edition has recently appeared, indicating its popularity. In addition to his primary interest in tuberculosis, Dr. Hawes is one of the outstanding public spirited men of Boston, where he has ac-

complished much in the social and medical problems of that community.

The opportunity of hearing these men should appeal to not only those primarily interested in tuberculosis and internal medicine but also to the men who are thrown into contact from time to time with tuberculous patients and yet do not have the opportunity of keeping abreast of what is going on in tuberculosis work. Dr. Heise and Dr. Hawes can be depended upon to give the latest information concerning the diagnosis of this disease and the modern methods of treatment which have been so extensively modified in the last few years through surgical approaches to the problem of the care and cure of a tuberculous person.

NEWS ITEMS

Dr. Amedee Granger attended the Fifth International Congress of Radiology in Chicago, September 12-17, 1937. At this meeting there was an exhibit of his work on the sphenoid and mastoid. Doctor Granger also served as a member of the Committee for the Reception of Foreign Guests.

Dr. M. Lyon Stadiem delivered a paper before the American Congress of Physical Therapy in Cincinnati on September twenty-first.

We regret to report the loss by death of two of our Active Members: Drs. I. I. Lemann and Leopold Mitchell.

Dr. C. C. Bass recently received an honorary doctor's degree from Duke University, having been cited for his work as Professor of Experimental Medicine, Director of the Laboratory of Clinical Medicine, and as Dean of the Tulane Medical School.

SOUTHERN MEDICAL NEWS

Plans for the Southern Medical Convention are rapidly maturing, and the attention of the membership is called to the following matters:

The Scientific Exhibits Committee is anxious to receive all requests for exhibit space not later than October 10.

The Membership Committee will very shortly canvass the profession of the city and state with the purpose of increasing the membership in the Southern Medical Association. This, the second largest medical organization in the United States, offers to its membership an annual meeting of unusual scientific merit and a medical journal which ranks among the best.

As the financing of this convention is a direct obligation of every member of the Society, the Budget Committee has settled upon an amount sufficient to take care of the absolute needs of this meeting. Members of the Society will very

shortly be asked to make individual contributions of a nominal sum. The per capita will be evenly apportioned and the surplus, if any, remaining after the conclusion of the meeting will be reapportioned to the members of the Society. You are urged to facilitate the work of the Finance Committee by making your contributions as promptly as possible after you have been approached.

The President, Dr. James T. Nix, has appointed the following members of the Society as hosts to the different sections of the Southern Medical Convention:

Section on Medicine—Drs. Randolph Lyons, Jules Myron Davidson, L. C. Chamberlain, Willard R. Wirth, and Howard Russell.

Section on Pediatrics—Drs. Rena Crawford, G. Richarda Williamson, Julian Graubarth, Jack E. Strange, and Roy E. de la Houssaye.

Section on Gastro-Enterology—Drs. H. L. Weinberger, A. L. Levin, Daniel N. Silverman, and Donovan C. Browne.

Section on Pathology—Drs. Andrew V. Friedrichs, Edwin H. Lawson, John A. Lanford, Aldea Maher, and Maurice Couret.

Section on Neurology—Drs. E. McC. Connely, Lucy Scott Hill, H. Randolph Unsworth, Grace Goldsmith, and Geo. F. Roeling.

Section on Radiology—Drs. E. R. Bowie, L. W. Magruder, Leon J. Menville, T. T. Gately, and John C. Rodick.

Section on Dermatology—Drs. J. W. Tedder, M. T. Van Studdiford, James K. Howles, R. A. Oriol, and J. N. Roussel.

Section on Surgery—Drs. Howard R. Mahorner, J. Ross Veal, Frank Chetta, J. T. Brierre, and Edmond Souchon.

Section on Bone and Joint Surgery—Drs. J. T. O'Ferrall, Isidore Cohn, Frank Brostrom, H. Theodore Simon, and Paul A. McIlhenny.

Section on Gynecology—Drs. Curtis H. Tyrone, P. Graffagnino, Marcy J. Lyons, M. M. Hattaway, and Julian Lombard.

Section on Obstetrics—Drs. Thos. Benton Sellers, Walter E. Levy, Katharine Havard, Edward L. King, and Arthur Caire, Jr.

Section on Urology—Drs. Robert F. Sharp, Edgar Burns, H. D. Ogden, R. L. Gordon, and C. L. Peacock.

Section on Railway Surgeons—Drs. Roy B. Harrison, Wm. P. Bradburn, Ralph J. Christman, H. W. Kostmayer, and Chas. F. Gelbke.

Section on Ophthalmology and Otolaryngology—Drs. Chas. A. Bahn, Chas. L. Cox, Monte F. Meyer, Spencer B. McNair, and E. Garland Walls.

Section on Public Health—Drs. Wm. H. Seemann, A. E. Fossier, J. M. Batchelor, Jos. A. O'Hara, and J. A. Henderson.

Section on National Malaria Control—Drs. C. C. Bass, Ernest Carroll Faust, and Jos. S. D'Antoni.

Section on Medical Education—Drs. John H. Musser, Rigney D'Aunoy, Henry Laurens, Alton Ochsner, and F. F. Boyce.

Section on American Society of Tropical Medicine—Drs. Chas. F. Craig, Wm. H. Seemann, J. L. Locascio, and C. J. Tripoli.

Section on Anesthesia—Drs. Lily L. Dismuke, C. J. Vedrenne, Ansel Caine, Geo. B. Grant, and Mary R. Niebergall.

Section on Proctology—Drs. J. W. Warren, Maurice Lescale and Warren H. Hebert.

Section on Allergy—Drs. N. K. Edrington and B. G. Efron.

The Arrangements Committee solicits and will need the wholehearted cooperation of the full membership in successfully conducting this convention.

Lucien A. Ledoux, M. D., General Chairman,
Committee of Arrangements.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY NEWS

Announcement is made by the Executive Committee of the following Chairmen and Vice-Chairmen of the various sections of the New Orleans Graduate Medical Assembly:

Dermatology—

Dr. James K. Howles, Chairman.

Dr. M. T. Van Studdiford, Vice-Chairman

Ear, Nose, and Throat—

Dr. Wm. Wagner, Chairman

Dr. H. Ashton Thomas, Vice-Chairman

Gastro-Enterology—

Dr. Daniel N. Silveramn, Chairman

Gynecology—

Dr. Lucien A. LeDoux, Chairman

Dr. John T. Sanders, Vice-Chairman

Medicine—

Dr. Philip H. Jones, Chairman

Dr. Charles F. Craig, Vice-Chairman

Neurology—

Dr. H. Randolph Unsworth, Chairman

Dr. E. McC. Connely, Vice-Chairman

Obstetrics—

Dr. Walter E. Levy, Chairman

Dr. E. L. Zander, Vice-Chairman

Ophthalmology—

Dr. E. E. Allgeyer, Chairman

Orthopedics—

Dr. Paul A. McIlhenny, Chairman

Dr. Geo. C. Battalora, Vice-Chairman

Pathology—

Dr. Geo. H. Hauser, Chairman

Pediatrics—

Dr. Robert A. Strong, Chairman

Dr. Ruth G. Aleman, Vice-Chairman

Radiology—

Dr. Leon J. Menville, Chairman

Surgery—

Dr. Waldemar R. Metz, Chairman

Dr. Howard R. Mahorner, Vice-Chairman

Urology—

Dr. Edgar Burns, Chairman

LIBRARIAN'S REPORT TO BOARD

July, 1937

The Library has loaned to doctors during July, 560 books and journals or more than one to each member of the Society,—a worthy record for a hot summer month. An additional 116 items have been loaned to students, making a total circulation of 676 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

During July, 18 volumes have been added to the Library, all of which were received by binding.

Miss Marshall gave two talks before the members of Le Petit Salon on their summer programs,

one on "Plantation Medicine" and the other on the "Diary of a Medical Student, Thomas H. Wade," who attended medical school in New Orleans during the session of 1851-52.

The following doctors were elected to membership:

Active—Drs. Jos. T. Brierre, Emma S. Moss, and A. L. Whitmire.

Associate—Dr. Warren H. Hebert.

Dr. A. N. Lewis transferred from Interne to Associate Membership.

Dr. Hugh Thompson Beacham announces the opening of his offices for the practice of Urology—1110 Pere Marquette Bldg.

DOCTOR WANTED

Excellent location. Jackson, Louisiana.

For full details, communicate with Dr. S. M. Blackshear, New Orleans.

LOUISIANA STATE MEDICAL SOCIETY NEWS

TRI-PARISH MEDICAL SOCIETY

The Tri-Parish Medical Society held its regular monthly meeting at Lake Providence on September seventh. The following were present: Drs. J. P. Davis, President; William K. Evans, G. S. Hopkins and William H. Hamley from East Carroll Parish; Drs. W. McG. Dollerhide, Dan W. Kelly, E. D. Butler from West Carroll; Drs. Joseph Whitaker and T. B. Sparks from Tensas, and Drs. E. O. Edgerton and D. H. Allen from Madison.

Drs. Smith W. Douglas from Eudora, Ark., J. H. Burge from Lake Village, Ark., and Dr. C. G. Leverett from Eudora were guests. Dr. J. H. Burge presented a paper entitled "Infections of the Hands and Feet". This was discussed by Drs. Whitaker, Butler and Burge. Dr. Smith W. Douglas read a paper on "Medical Fads and Fallacies", which was discussed by Drs. Whitaker, Hopkins, Leverett, Edgerton and Douglas.

Dr. D. H. Allen from Tallulah was elected to membership.

The next meeting will be held at Tallulah, Madison Parish, on Tuesday, October fifth.

William H. Hamley, M. D., Sec.

CLINICS AND DEMONSTRATIONS,
TULANE UNIVERSITY

During the week beginning November 22, the Medical School of Tulane will put on a week of post-graduate medical instruction to which the medical profession of the state and surrounding states will be invited and, to which the graduates of Tulane will be extended a special welcome. This meeting, to which all medical men will be cordially

received, will be a week of post-graduate instruction in medicine, surgery, obstetrics and the specialties. Not only will the faculty of Tulane participate in the lectures and demonstrations but also there will be invited a small group of distinguished teachers from other localities. For example, on Monday and Tuesday evenings there will be an Institute on Tuberculosis which will be conducted by two of the outstanding phthisiologists in this country, Dr. Fred H. Heise and Dr. John B. Hawes. Announcement of this meeting and the qualifications of these two men is recounted elsewhere in this number (p. 231).

In addition to the medical demonstrations and medical aspects of the meeting, outstanding will probably be the dedication of the medical library in honor of our great Dr. Matas on Friday evening, November 26. At this meeting Dr. Matas will speak, in acceptance of the honor and other speakers will also give addresses.

The social aspects of the occasion should not be forgotten. There will be several evening entertainments provided and of course on Saturday, November 27 the annual Louisiana State University-Tulane University football game will be held in the stadium.

It is earnestly hoped that there will be a large attendance of Tulane men. They could come a few days ahead of the Southern Medical and see what is going on here in their old medical school; there will be the opportunity of attending a great football game and then they can stay on a few days longer and listen to the original papers, see the scientific exhibits and participate in the ac-

tivities of the Southern Medical. If a man can afford to spend two weeks away on vacation which will be instructive, pleasurable and enjoyable these two weeks of concentrated medical activity will afford instruction, pleasure and enjoyment.

DEATH OF DOCTOR SIMMONS

Doctor George H. Simmons died on September first at the age of eighty-five. Probably more than any one man, Doctor Simmons is responsible for the present high standing and efficiency of the American Medical Association. In 1899 he became secretary of the organization and editor of its periodicals. In 1901 he became also general manager. Under his inspired leadership, the growth of the Journal became outstanding, and it has, at the present time, the largest circulation of any medical journal in the world. In his incumbency, the Committee on Medical Education and Hospitals was formed in 1905. At the same time the Council on Pharmacy and Chemistry was developed. Many other activities were initiated at this time. In all, Doctor Simmons was really the man who put over the new high aims of the officers and members of the Association. He retired some few years ago.

Doctor Simmons, at the occasional occasions when he was present at the A. M. A., was always acclaimed with enthusiasm in recognition of all he had done and accomplished for organized medicine.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information. For the week ending August 14, the following diseases were reported in double figures: fifty-three cases of pneumonia, 49 of pulmonary tuberculosis, 43 each of malaria and syphilis, 42 of gonorrhea, 35 of cancer, 17 of typhoid fever, 16 of diphtheria, 14 of whooping cough and 11 of influenza. The typhoid fever cases were scattered throughout the state, no one parish reporting more than two cases during this week. There were reported also 8 cases of poliomyelitis, four of which originated in Caddo and one each in Bienville, Calcasieu, Claiborne and Tangipahoa Parishes. A case of undulant fever was reported from Orleans Parish and one from Terrebonne. For the week ending August 21, pneumonia again led all reported diseases, with 49 cases cited by the doctors of the state. This was followed numerically by 44 cases of syphilis, 42 of pulmonary tuberculosis, 31 of cancer, 23 of gonorrhea, 22 of malaria, 18 of typhoid fever and 10 of diphtheria. The typhoid fever cases were again scattered throughout the state, with Winn and Orleans Parishes each reporting

the largest number, namely 3 cases. Poliomyelitis was reported in the following parishes: Ouachita, 2 cases; Caddo, East Carroll, Pointe Coupee and West Feliciana Parish each one. One case of undulant fever developed in Iberia Parish. For the week ending August 28, the thirty-fourth week of the year, syphilis regained its customary place at the head of the list with 71 cases appearing in the weekly morbidity report. This was followed by 46 cases of malaria and pneumonia, 29 each of tuberculosis and cancer, 24 of gonorrhea, 23 of typhoid fever, 18 of whooping cough and 10 of diphtheria. The typhoid fever was fairly well distributed throughout the state with this exception; Lafayette Parish reported 6 cases. There were only four cases of poliomyelitis reported this week, one each from Bienville, Franklin, Orleans and Webster. Typhus fever made its appearance for the first time in some months with 2 cases reported from East Baton Rouge, and one from Pointe Coupee. For the week ending September 4, there was a very big jump in the number of cases of syphilis and gonorrhea, 152 in the former and 71 in the latter being recorded. These two diseases were followed by 49 cases of tuberculosis, 43 of cancer, 41 of pneumonia, 35 of malaria, 19 of typhoid fever and 16 of whooping cough. Bienville, Caddo and Claiborne Parishes each had 3 cases of typhoid fever; no other parish had more than 2. The cases of poliomyelitis were decreased to 4 this week, one each from Caddo, Madison, Natchitoches and Union. For the thirty-sixth week of the year, ending September 11, there were nearly five times as many cases of syphilis as any other disease. The following diseases then followed in double figures: forty-four cases of pneumonia, 33 of malaria, 31 of tuberculosis, 21 of gonorrhea, 19 of typhoid fever and 16 of cancer. No parish reported more than 2 cases of typhoid fever except Acadia which had 3. Seven cases of poliomyelitis were reported this week, one each from Beauregard, Bossier, Ouachita and Tensas, and 3 from Orleans. One of the cases from Orleans was imported.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending August 14, there were 141 deaths in the city, divided 86 white and 55 negro. Fifteen of these deaths were in infants under one year of age. The following week, ending August 21, there was a drop of eleven deaths in the city, 130, of whom 71 were white and 59 negro. Sixteen of these deaths were in children under one year of age. For the week ending August 28, there was a total of 140 people dying in New Orleans; of these, 85 were in the white and 55 in the negro population. The infant mortality was unchanged from that of the previous

week. For the week of September 4, there was a big rise, largely due to 106 deaths in the white population, whereas the negro population had but 64, making a total of 170 for the two races. It is rather interesting that only 10 of these deaths were in small infants.

CORRESPONDENCE

The New Orleans Medical and Surgical Journal,
New Orleans, La.

On page 159, September number, I read: "Dr. Dyer was the first to administer chaulmoogra oil to the lepers." The writer recalls Dr. Samuel Logan, in the Charity Hospital, in diagnosing a case as leprosy, pull some of the toes and fingers, throw them into a receptacle to be burned and prescribe chaulmoogra oil. This was in the winter of 1888-1889. Dr. Isadore Dyer was not then a physician.

George F. Powell, M. D.,
Tulane, 1889.

Dr. P. T. Talbot, Secretary,
Louisiana State Medical Society.
Dear Doctor:

To assist in bringing before the public the effort being made to eradicate syphilis, there has been prepared a set of six educational posters. It is believed these posters will be of assistance to physicians who wish to take part in this activity. These posters, if desired, may be obtained from the Superintendent of Documents, Washington, D. C., at 75c per set. It will be appreciated if you will bring this matter to the attention of the members of your State Medical Association through your journal or in any other effective way.

R. A. Vonderlehr,
Assistant Surgeon General,
Division of Venereal Diseases.

Editor, New Orleans Medical & Surgical Journal
New Orleans, Louisiana.

Dear Sir:

Enclosed you will find a copy of a letter written to the Director of the United States Civil Service Commission and the United States Post Office Department.

Very truly yours,
F. U. Darby, M. D.

Baton Rouge, Louisiana
September 18, 1937

Director, U. S. Civil Service Commission
Washington, D. C.

Dear Sir:

I am a duly qualified and licensed M. D. in active practice in the City of Baton Rouge, Louisiana.

On the morning of September 17, 1937, I was called to the local post office to attend a carrier who had fainted and, in falling, had injured his

head. He was removed to his home by ambulance and I followed, rendering treatment upon his arrival. Calling upon him at 12:30 p. m. of the same date, I was informed by the family that the local acting Postmaster, Mr. Brown, had called by phone stating that the injured party would have to be treated by a so-called government designated doctor, and that I be so informed.

He further stated that the emergency treatment which I had rendered would be taken care of by the government, but that future treatment would have to be made by the so-called acceptable government physician.

In addition, he stated that if I continued the case, payment would be withheld for my services. I know of no law in this country that makes it mandatory that any individual, federal employees not excepted, accept treatment from any designated physician or group of physicians.

It has always been the inalienable right of any injured or ill individual to secure the services of any physician he so desired and it will continue to be the case until we have statutory Federal control of medicine.

If the government has instituted such a policy in regard to its employees, it has failed to come to the attention of the writer and to say the least, if such is the policy of the commission, it is of the lowest type of discrimination against the majority of private practitioners. I understand fully that the Civil Service Commission has the right to designate individual doctors as examiners for candidates, but I cannot accept the apparent fact that they may also designate who shall treat the injured or sick.

If Mr. Brown's action in this matter is upheld by the commission or the post office department, federal control of medicine is definitely here and the medical profession had best accept it in good grace, as I shall, but if on the other hand his action is without authority or precedent, it is my intention to hold him fully accountable.

It has never been my intention to allow my services to be limited to emergency treatment for federal employees or anyone else, except at the explicit direction of the patient himself.

I desire that the matter be fully investigated and that I be informed as to whether this state of affairs is purely a matter of local favoritism or a definite federal policy, that I may intelligently govern my actions in the future.

Very truly yours,
F. U. Darby, M. D.

EXAMINATIONS: AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next examinations (written and review of case histories) for Group B candidates will be held in various cities of the United States and Canada on Saturday, November 6, 1937, and Saturday, February 5, 1938. Application for admis-

sion to these examinations must be filed on an official application form in the office of the Secretary at least sixty days prior to these dates.

The general oral, clinical and pathological examinations for all candidates (Group A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13, and 14, 1938, immediately prior to the meeting of the American Medical Association.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, (6), Pa.

ANNOUNCEMENTS OF MEETINGS

The fourth annual meeting of the Southeastern Branch Society of the American Urological Association is to be held November 5-6 in Birmingham, Ala., with headquarters at the Tutwiler Hotel.

The New Orleans Gynecological and Obstetrical Society will present before the Orleans Parish Medical Society on October 25, 1937, a program on the cesarean section. Twelve papers and one motion picture will be presented, covering thirteen points in regard to the cesarean section: for example, historical sketch, indications for use, pre-operative and postoperative care, and a summary of a ten years' survey of the section in New Orleans. The speakers will be members of the New Orleans Gynecological and Obstetrical Society, with the exception of Dr. Ansel M. Caine, who will present a paper on anesthesia. Each speaker will be limited to a maximum of ten minutes, and some of the papers will cover five minutes or less.

For the first time a program of this type is being attempted. The New Orleans Gynecological and Obstetrical Society and the Orleans Medical Society wish to extend to local physicians and those throughout the state a cordial invitation to attend this meeting, on October 25 in the auditorium of the Hutchinson Memorial Building, 1430 Tulane Avenue.

GRADUATE FORTNIGHT OF THE NEW YORK ACADEMY OF MEDICINE

The two weeks' period devoted to the study of some aspects of medicine under the leadership of the New York Academy of Medicine will this year be held from November 1-12, 1937. Medical and surgical disorders of the urinary tract will be the subject, and will be presented from a clinical, experimental, physiological and surgical viewpoint. The distinguished group of speakers, local men and men imported from medical centers throughout the world, are prepared to present their subjects. The evening sessions will be held at the Academy of Medicine; the clinical programs in the various hospitals of New York City.

Information regarding this meeting may be obtained from the Headquarters of the New York

Academy of Medicine, 2 East 103rd Street, New York City.

PAN AMERICAN MEDICAL ASSOCIATION

The Seventh Cruise Congress of the Pan American Medical Association is to be held in the form of a cruise to Cuba and the West Indies. The SS "Queen of Bermuda" has been chartered for this purpose and will leave from New York on Saturday, January 15 at 6:30 p. m. There will be a five day stop in Havana, where the Hotel Nacional will serve as headquarters for the scientific sessions. Other ports of call will be Port-au-Prince, Haiti, Trujillo City, Santo Domingo, and San Juan, Puerto Rico. The liner will dock again in New York in the early morning of Monday, January 31.

Among the distinguished medical men who have promised to give addresses at the scientific sessions are: Drs. William D. Haggard, Chevalier Jackson, Fred H. Albee, W. Wayne Babcock, Hugh H. Young and Lewellys F. Barker.

Information regarding the Cruise Congress may be obtained from Dr. Joseph J. Eller, Director General, at the Executive Offices in 745 Fifth Avenue, New York City.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

The Pacific Fleet will be in the port of Los Angeles during the Convention of the Association of Military Surgeons on October 14-16, 1937 at the Ambassador Hotel. An unusually interesting program has been prepared and the Scientific and Technical Exhibits will be the largest in the history of the organization. Physicians, surgeons, dentists and veterinarians of the Army, Navy, Marine Corps, C. C. Camps and the Veterans Administration will be present. For additional information write to Robert L. Lewin, Ambassador Hotel, Los Angeles, California.

AMERICAN COLLEGE OF SURGEONS

The Twenty-seventh Annual Clinical Congress of the American College of Surgeons will be held in Chicago, October 25-29, with headquarters at the Stevens Hotel. The usual program will be carried out, presenting addresses by distinguished foreign representatives. The annual oration on surgery will be delivered by J. P. Lockhart-Mumery, M. B., B. Ch., Fellow of the Royal College of Surgeons, London. Other foreign representatives include Professor Rosenthal, Leipzig; Professor Brehner, Johannesburg; Dr. Girdwood, Johannesburg; Dr. Van Tienhoven, Maracaibo, Venezuela.

SOUTHERN PSYCHIATRIC ASSOCIATION MEETING

The following is a preliminary list of speakers who will participate in the meeting of the Southern Psychiatric Association to be held in San Antonio.

October eighth and ninth, at the Gunther Hotel: Dr. C. C. Burlingame, Psychiatrist-in-Chief, The Neuropsychiatric Institute of Hartford Retreat, Hartford, Conn.; Dr. Philip Smith, Chief Medical Inspector, Department of Mental Hygiene, New York; Dr. Samuel Hamilton, Director, Division on Hospital Service, The National Committee for Mental Hygiene, White Plains, N. Y.; Dr. George T. Harding, Director of the Harding Sanitarium, Columbus, Ohio; Dr. Isham Kimball, Director, U. S. Veterans' Hospital, Lexington, Ky.; Dr. Giles W. Day, Director, Galveston Psychopathic Hospital, Galveston, Texas; Dr. Walter J. Otis, Psychiatrist-in-Chief, De Paul Sanitarium, New Orleans, Louisiana; Dr. Guy Witt, Professor of Psychiatry, Baylor University, Dallas, Texas; Dr. W. C. McConnell, St. Petersburg, Fla.; Dr. Henry L. Poer, Director Thyroid Clinic, Municipal Hospital, Atlanta, Ga.; Dr. Raymond S. Crispell, Clinical Professor of Neuropsychiatry, Duke University, Durham, N. C.; Dr. George R. Herrmann, Clinical Professor Medicine, University of Texas, Galveston Texas; Dr. Wm. D. Partlow, Supt. Ala. State Hospitals, Tuscaloosa, Ala.; Dr. Newdigate M. Owensby, Director Owensby Neuropsychiatric Clinic, Professor Psychiatry, University of Georgia Medical School, Atlanta, Ga.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

LETTER FROM OUR PRESIDENT, MRS. GEORGE D. FELDNER

Dear Auxiliary Members: The coming of October means renewed activity in our auxiliary and a continuance of the very splendid projects that have heretofore been accomplished through the keen interest and loyal cooperation of each mem-

ber of the Woman's Auxiliary to the Louisiana State Medical Society which I hope will grow ever more steadfast.

It is with a great deal of pleasure that I welcome into our midst, the four new auxiliaries that have already been organized since April of this year, namely:—

Tri-Parish, Tallulah, La., Mrs. E. O. Edgerton, President.

Terrebonne, Houma, La., Mrs. J. B. Duval, President.

Lafayette, Lafayette, La., Mrs. R. D. Voorhies, President.

St. Mary, Franklin, La., Mrs. Chas. M. Horton, President.

New auxiliaries are the best proof of our worth to the medical profession, for only through unity and co-operation can we be of genuine service and thereby attain the end for which we are striving—the approval and support of every doctor, and the doctor's wife as an active and interested member of our auxiliary.

The letter appearing in the September issue of the Journal from Dr. Charles M. Horton, President of the Louisiana State Medical Society, and that of Dr. Joseph O'Hara, President-Elect of the State Society, appearing in this issue, are indeed very inspiring with their wholehearted warmth of approval. Such support is an incentive for us to do bigger and better things when we realize that there is a definite place for us along side the medical profession.

The State Medical Society has always cooperated with us in every way and they have been most generous in allocating space in the Journal for our auxiliary news. Our relations have been most enjoyable and we are very grateful to Dr. John H. Musser, Editor-in-Chief, and Dr. Paul T. Talbot, General Manager, for their many courtesies extended us, and who have aided us whenever called upon.

It is only through the pages of the New Orleans Medical and Surgical Journal that each auxiliary and each member can be advised of the progress being made in our work, and I cannot stress too urgently the importance of your reading this column each month so that you can familiarize yourself with the various activities.

Mrs. Lucian W. Alexander is our very capable Publicity Chairman and she will appreciate receiving from you any items of interest and news from your particular locality, for only by using this space accorded us each month, can we show our appreciation to the State Society.

You will note at the beginning of this column, the names of our elective officers: following, are the names of our Chairmen of Standing Committees and Councilors:—

CHAIRMEN OF STANDING COMMITTEES

Archives—Mrs. S. Chaille Jamison, 1524 Seventh St., New Orleans.

Doctor's Day—Mrs. A. L. Levin, 3725 Napoleon Ave., New Orleans.

Exhibits—Mrs. E. O. Edgerton, Tallulah, La.

Finance—Mrs. Clarence B. Erickson, 423 Herndon, Shreveport, La.

Historian—Mrs. W. P. Gardiner, 2315 So. Carrollton Ave., New Orleans.

Hygeia—Mrs. W. H. Hamley, Lake Providence, La.

Indigent Physicians' Fund—Mrs. Claude A. Martin, Welsh, La.

Legislation—Mrs. Armand G. McHenry, 1810 Riverside, Monroe, La.

Organization—Mrs. C. Grenes Cole, 1422 Bordeaux St., New Orleans.

Press and Publicity—Mrs. Lucian W. Alexander, 1472 Arabella St., New Orleans, La.

Printing—Mrs. Roy B. Harrison, 2327 Napoleon Ave., New Orleans.

Program—Mrs. W. P. Bordelon, 1516 Kirkman St., Lake Charles, La.

Public Relations—Mrs. DeWitt T. Milam, 1704 Island Dr., Monroe, La.

Revisions—Mrs. John L. Scales, 2782 Fairfield, Shreveport, La.

COUNCILORS

1st Congressional District—Mrs. Anees Mogabgab, 3200 Versailles Blvd., New Orleans, La.

2nd Congressional District—Mrs. D. Rogers Brewster, 7918 Freret St., New Orleans, La.

3rd Congressional District—Mrs. C. M. Horton, 305 Iberia St., Franklin, La.

4th Congressional District—Mrs. C. E. Rew, 1337 Oakland Street, Shreveport, La.

5th Congressional District—Mrs. Courtland P. Gray, 115 Louisville Ave., Monroe, La.

6th Congressional District—Mrs. Roy Carl Young, Covington, La.

7th Congressional District—Mrs. G. W. Remage, Jennings, La.

8th Congressional District—Mrs. J. Aubrey White, 2613 Vance St., Alexandria, La.

I urge your staunch and earnest support to these committees who already have launched their programs and from whom you will hear from time to time.

Elsewhere in these pages, you will find a list of all parish auxiliary officers to date.

In the August issue of the *Journal* appeared our projects for the year 1937-38 which have the hearty approval of the Advisory Council of the State Society. An informed member is an asset to her auxiliary, so familiarize yourself thoroughly with the aims and purposes of your local and state auxiliary and serve wherever possible to further the objectives of our organization.

The Southern Medical Auxiliary meets in New Orleans November 30-December 3, 1937. From whispers heard here and there, this tends to be a very interesting and entertaining meeting and a very large attendance is looked for. And as you all know, the annual State meeting will also be held in New Orleans next year—April 25-27, 1938, and Mrs. S. Chaille Jamison has been appointed General Chairman. While April sounds far off at this time, it is not too soon to begin planning for this meeting and Mrs. Jamison has already formulated plans for a very interesting program. I am sure you will all want to partake of the very cordial hospitality that awaits you in New Orleans, so plan now to attend these two meetings.

May I ask the continued loyalty and interest of each member which will enable us to keep our auxiliary in the forefront to enjoy the position among organizations that it now does?

To each of you I extend cordial good wishes and trust that you will have a very enthusiastic and successful auxiliary year.

Sincerely,

Alma W. Feldner, President.

Woman's Auxiliary

Louisiana State Medical Society.

NAMES OF PARISH AUXILIARIES AND OFFICERS

Caddo Parish

Shreveport

Organized 1928

Meets second Wednesday

President—Mrs. John T. Crebbin, 1133 Kingshighway.

Pres.-Elect—Mrs. C. E. Rew, 1337 Oakland.

1st Vice-President—Mrs. William B. Heidorn, 572 Unadilla.

2nd Vice-President—Mrs. T. J. Bush, 582 Oneonta.

Recording Secretary—Mrs. C. B. Erickson, 423 Herndon.

Corresponding Secretary—Mrs. W. B. Butler, 926 Delaware.

Treasurer—Mrs. O. C. Rigby, 816 Oneonta.

Parliamentarian—Mrs. R. T. Lucas, 535 Pierremont.

Publicity Secretary—Mrs. John L. Scales, 2783 Fairfield.

Orleans Parish

New Orleans

Organized 1929

Meets second Wednesday

President—Mrs. Jules Myron Davidson, 10 Triannon Plaza.

Pres.-Elect—Mrs. C. Grenes Cole, 1422 Bordeaux St.

1st Vice-President—Mrs. E. E. Allgeyer, 1139 Nashville Ave.

2nd Vice-President—Mrs. A. J. Hockett, 2236 St. Chas. Ave.

3rd Vice-President—Mrs. Theodore Simon, 2502 S. Carrollton Ave.

4th Vice-President—Mrs. H. Vernon Sims, 7737 Belfast St.

Recording Secretary—Mrs. Willard R. Wirth, 2523 Octavia St.

Corresponding Secretary—Mrs. Charles L. Brown, 27 Neron Place.

Treasurer—Mrs. John S. Dunn, 8410 Pontchartrain Blvd.

Parliamentarian—Mrs. Anees Mogabgab, 3300 Versailles Blvd.

Historian—Mrs. Jonas W. Rosenthal, 5355 St. Chas. Ave.

Publicity Chairman—Mrs. S. M. Blackshear, 2306 Camp St.

Calcasieu Parish
Lake Charles
Organized 1930
Meets third Friday

President—Mrs. G. C. McKinney, 924 Broad St.
Pres.-Elect—Mrs. Walter Moss, 511 Hodges St.

1st Vice-President—Mrs. E. L. Clement, 910 Pujo St.

2nd Vice-President—Mrs. Olin Moss, Shell Beach Drive.

Recording Secretary—Mrs. C. V. Hatchette, 105 Alvin St.

Corresponding Secretary—Mrs. W. G. Fisher, 1322 Kirkman St.

Treasurer—Mrs. J. E. Sorrelle, Iowa, La.

Parliamentarian—Mrs. R. B. Marshall, Sulphur, La.

Ouachita Parish
Monroe
Organized 1930
Meets third Wednesday

President—Mrs. A. G. McHenry, 1810 Riverfront.
Pres.-Elect—Mrs. C. U. Johnson, 1213 St. John.
Vice-President—Mrs. D. M. Moore, 1209 Park Avenue.

Recording Secretary—Mrs. Douglas Williams, 1302 No. 2nd.

Corresponding Secretary—Mrs. F. C. Bennett, 301 "K" St.

Treasurer—Mrs. Henson Coon, 204 Mulberry.

Historian and Exhibit—Mrs. B. M. McKoin, Edgewater Garden.

Parliamentarian—Mrs. A. B. Gregory, 406 Auburn.

Publicity Secretary—Mrs. DeWitt T. Milam, 1704 Island Drive.

Jefferson Davis Parish
Jennings
Organized 1934

Meets second Tuesday

President—Mrs. G. W. Remage, Jennings, La.

Vice-President—Mrs. John M. Whitney, Jennings, La.

Secretary—Mrs. R. R. Arceneaux, Welsh, La.

Treasurer—Mrs. J. McClure, Welsh, La.

Tri-Parish
Tallulah

Organized 1937

Meets first Tuesday

President—Mrs. E. O. Edgerton, Tallulah, La.

President-Elect—Mrs. W. H. Hamley, Lake Providence, La.

Vice-President—Mrs. J. P. Davis, Lake Providence, La.

Secretary—Mrs. S. Provine, Tallulah, La.

Treasurer—Mrs. B. C. Abernathy, Soudheimer, La.

Historian—Mrs. J. Whitaker, St. Joseph, La.

Parliamentarian—Mrs. W. P. Yerger, Tallulah, La.

Publicity Chairman—Mrs. T. P. Sparks, Newellton, La.

Terrebonne Parish
Houma
Organized 1937

Meets semi-annually

President—Mrs. J. B. Duval, 238 E. Park Ave.

Vice-President—Mrs. M. F. Houston, Barrow Street.

Secretary and Treasurer—Mrs. Willard Ellender, 307 Gabasse St.

Parliamentarian—Mrs. Jacob Hoth.

Lafayette Parish
Lafayette
Organized 1937
Meets Quarterly

President—Mrs. R. D. Voorhies, 115 Cherry St.

Vice-President—Mrs. G. R. DeLaurel, Broussard, La.

Secretary and Treasurer—Mrs. R. Sidney Hernandez, Duson, La.

St. Mary Parish
Franklin
Organized 1937

President—Mrs. Charles M. Horton, 305 Iberia St.

Secretary-Treasurer—Mrs. A. C. Kappel, Franklin, La.

Parliamentarian—Mrs. Dreher, Morgan City, La.

Claiborne Parish
Homer-Haynesville, La.
Organized 1935
Meets second Friday

LETTER FROM DR. J. A. O'HARA

As President-Elect of the Louisiana State Medical Society, it is a pleasure to extend congratulations to the Woman's Auxiliary on the understanding interest manifested and the sympathetic co-operation with the parent organization.

I have profound confidence in the vision of women workers in progressive, humanitarian movements and have always felt that the Woman's Auxiliary would prove, as it has, a valuable adjunct to the State Medical Society.

It is my hope that the Auxiliary will continue to keep informed concerning the major objectives of the Society and render the same generous assistance as in the past.

Very sincerely yours,

J. A. O'Hara, M. D.,
President-Elect.

Thank you Dr. O'Hara for your splendid letter, I am sure our Auxiliary members will be delighted with it.

Remember—Publicity Chairmen, I need your help each month to give our Auxiliary members interesting news—so don't forget me.

Mrs. Lucian W. Alexander,
Chairman, Press and Publicity.

BOOK REVIEWS

Snow On Cholera—Being a Reprint of Two Papers:

By John Snow, M. D., together with a Biographical Memoir, by B. W. Richardson, M. D., and an Introduction by Wade Hampton Frost, M. D. New York, The Commonwealth Fund, 1936. pp. 250. Price \$2.50.

The two papers contained in this volume ("On the Mode of Communication of Cholera" and "On Continucus Molecular Changes") represent Snow's best known works. The first of these is a classic contribution to medical literature and indicates Snow's persistency in attacking his problem. Cholera was raging in England, and no one knew how it was being spread. Snow clearly showed that the disease was found seldom in localities having a pure supply of water but invariably wherever the water supply was contaminated by the fecal discharges of cholera patients. His indictment of the Broad Street pump and of the Southwark and Vauxhall Company as distributing agencies for the cholera-spreading water was so unequivocal that none but the most stubborn could deny it. Even more convincing was his demonstration of cholera-infested areas containing houses where the disease had not appeared because the water supply was from an uncontaminated source.

Working before the dawn of bacteriology and with none of the modern equipment to track his prey, his clinical observations were direct enough to furnish convincing evidence that epidemics could be averted by preventing pollution of the water supply. This paper and its companion ("On Continuous Molecular Changes") should be read by all medical men not only because they are milestones in medical progress, but also because they illustrate the type of reasoning which has contributed greatly to the advancement of the medical sciences.

SYDNEY JACOBS, M. D.

Clinical Roentgenology of the Cardiovascular System: By Huge Roesler, M. D. Springfield and Baltimore. Charles Thomas, 1937. pp. 343. Price \$7.50.

This book is a rather comprehensive treatise of the use of the roentgen rays in the study of the cardiovascular system and is the result of the vast clinical and experimental experience of an author who has contributed many valuable papers on this subject. Throughout this work, the author emphasizes the value and the limitations of roentgenology in the diagnosis of cardiovascular diseases. The indications for the employment of the various roentgenological technics are thoroughly discussed.

Chapter I deals with technic and includes a detailed discussion of roentgenological methods, including the latest procedures of kymography and cinematography. In Chapters II through V a rather complete study of the normal cardiovascular system is obtained. The section on measurements is thorough and in considerable detail. An evaluation of the various technics of measurements is of special value to the cardiologist and roentgenologist desiring further information of this important subject.

In Chapter VI, the relationship of clinical examination to anatomy and roentgen findings is considered. The changes in the cardiovascular system associated with conditions of other organs are also included in this section. The remaining eight chapters are devoted to diseases of the cardiovascular system and are written with the author's usual thoroughness and attention to details.

The book is well illustrated by means of reproductions of roentgenograms and diagrams. There is a complete bibliography at the end of each chapter and therefore this work should serve as a valuable reference. This is not the type of book

one may read once and put away as it will be better appreciated each time it is studied.

J. N. ANE, M. D.

Fischerisms: By Howard Fabing and Ray Marr, 2nd ed. Springfield, Charles C. Thomas, 1937. pp. 47.

A booklet of aphorisms, puns and "wise cracks" gleaned from the lectures of Martin H. Fischer, distinguished Professor of Physiology at the University of Cincinnati. The pages, containing slightly over 100 words to a page, are 47 in number. Some of the aphorisms are excellent, some are forced but all of them show the man to be a keen observer of human nature and undoubtedly a stimulating lecturer.

J. H. MUSSER, M. D.

Autonomic Neuro-Effector Systems: By W. B. Cannon and A. Rosenblueth. New York, The Macmillan Company, 1937. pp. 229. Price \$4.00.

The book is an inspiration and an encouragement to research workers. The authors warn the reader that what is theory today may be discarded for something still newer tomorrow and faithfully keep their promise to submit the discoveries up to date in the autonomic system. The book is fascinating as well as instructive, the main point stressed is the different method of receiving and transmitting nerve impulse by the two great channels of involuntary nerves. The parasympathetic system elaborates acetylcholine which functions along its nerve path to the special organ under its control. Its action is direct and short lived; while the sympathetic system in addition, acts by chemicals in the blood stream and has a far reaching effect because sympathin and adrenine are not as quickly rendered inert as acetylcholine.

The manufacture of definite chemical compound through nerve impulse is not only proved but followed to its final step. The reviewer is especially interested in this monograph on account of his research with histamin and histidin.

Even if the theories so cleverly and clearly set forth in this book have to cede place to newer conceptions, the authors will lose none of their brilliancy and well deserved fame. The book will always stand as a landmark in the study of the intricate paths of nerve function.

NARCISSE F. THIBERGE, M. D.

Anatomy of the Fetal Pig: By John G. Sinclair, M. S., Ph. D. Ames, Ia., Collegiate Press, Inc. 1936. pp. 80. Price \$2.00.

This little book, which is primarily a laboratory manual, deals with the descriptive anatomy of the fetus. The subject matter is covered in detail, and in such a manner as to serve as a valuable

guide in fetal pig dissections. As a preparatory study to embryology and fetology in the medical curriculum, it should prove of considerable value.

T. H. OLIPHANT, M. D.

A Classification for Medical Literature: Compiled by Eileen R. Cunningham. 2d. ed. rev. & enl. Nashville, Tenn., Cullom & Gertner Co., 1937. pp. 204. Price \$2.00.

The classification and indexing of medical literature is a subject of importance to the entire medical profession, since only by competent and thorough indexing is the library of the world's medical knowledge made available. It may readily be seen that only a classification dealing exclusively with medicine and its related sciences can give us a workable system by the use of the shortest and simplest symbols, as well as the completeness, only to be attained by knowledge of a special field of knowledge. Such a classification is the one devised by Mrs. Cunningham, Librarian of the Vanderbilt University School of Medicine.

Arrangement of medical books by this system, will cause books on the same subject to stand together, neighbored by books on the subjects related to it. Classification is based on the letters of the alphabet, rather than the decimal system, thereby giving a much smaller grouping by even one letter. Subsequent division and subdivision by numeral and letter, group small subjects and even individual treatments adjacently.

The first edition of the Cunningham classification appeared on cards. This second edition in book form, being more compact and less expensive, will be more readily available to new medical libraries to which it should prove most valuable.

An alphabetical index makes the use of the classification simple and quick for ready reference.

MARY LOUISE MARSHALL.

A Laboratory Manual of Physiological Chemistry: By D. Wright Wilson. 3rd Ed. Baltimore, Williams and Wilkins Co., 1937. pp. 288. Price \$2.50.

This laboratory manual for elementary students covers the usual material included in similar laboratory guides.

The author is to be commended for keeping the book within a reasonably small size although it is not easy to decide whether the almost total lack of discussion of tests is a proper price to pay for brevity.

One is pleased to see a section of "Dietary Deficiencies" included, but including only two pages, as it does, it can do little more than call attention to the fact that this type of experiment is a true part of a laboratory course in physiological chemistry without furnishing adequate instruction

for a beginner. There is no reference to where further information is to be had.

An error on page 20 ("0.3 c.c." should read "0.03 c.c.") should be so obvious as to confuse only the most thoughtless of students.

References to standard texts and original articles are scarcely adequate. There is a four-place table of logarithms and an adequate index.

Format and arrangement of material are good, and the experiments are clearly presented.

SIDNEY BLISS, Ph. D.

Ophthalmoscopy, Retinoscopy, and Refraction: By W. A. Fisher, M. D., F. A. C. S. Chicago, H. G. Adair Ptg. Co., 1937. pp. 210.

Refraction is unfortunately being more and more neglected within the medical profession. With each year it becomes less and less a medical activity. Only one third of the refracting now done in this country is done by physicians. A simple textbook on refraction is therefore of greater importance from one point of view than a similar volume in other branches of ophthalmology.

The repeated editions of this small work containing some two hundred pages show that the demand does exist among physicians for elementary instruction in refraction and also that few simple practical works on this subject are written by physicians.

Dr. Fisher's book is very elementary even for beginners in ophthalmology. It contains a good deal of useful information and a few technical mistakes. The illustrations are numerous and on the whole good. The outstanding section is on orthoptic training which is written for more advanced readers than the other chapters. The index is reasonably complete. Unfortunately the actual technic of testing is neglected. In my opinion, it should be presented in much greater detail. Medical refractionists especially need to understand better every step in the actual testing of patients for glasses. The lack of this very understanding is one of the reasons why refraction is passing out of medical hands.

For the ophthalmic beginner, this book is apparently worthwhile.

CHAS. A. BAHN, M. D.

Textbook of General Physiology: By T. Cunliffe Barnes, D. Sc. Philadelphia. P. Blakiston's Son & Co., Inc., 1937. pp. 554. Price \$5.50.

This volume is based upon a year's course in the general physiology of cold-blooded animals. It is designed for college seniors who have received preliminary training in physics, chemistry and zoology. The author has selected certain subdivisions of the general subject and has been content with emphasis on essentials rather than details. He emphasizes certain problems to illustrate

general principles and gives special attention to the subjects of water metabolism and physical models of living systems.

The plan of the book presents first the physical chemistry of living systems; then follows a discussion of external and internal factors which regulate the organism. The first five chapters deal with the physical and chemical principles necessary for even an elementary understanding of general physiology. After a brief consideration of the nature of protoplasm in chapter six, the relation of the organism to the external environment is illustrated by selected problems in cellular permeability and irritability. The transition from the discussion of external to internal factors is made by the study of bioelectrical potentials and temperature characteristics. The last three chapters describe important aspects of the kinetics of the internal environment (oxidation, respiratory pigments, properties of the heart and chemical regulation by hormones).

The method of presentation includes many brief allusions to recent research. This departure from the more conventional pedagogical method is intended to encourage the growing tendency of the modern undergraduates to seek information from original sources. "If the book contributes in any way to the decline of the venerable method of spoon-feeding students with facile generalizations, the author will feel that his labors have not been altogether in vain."

One of the designs of the author has been to prepare a reference book as well as a useful text and, as he himself admits, it contains more than the required work for a particular course. There is a bibliography of approximately one thousand titles. Accompanying the textbook, there is a laboratory manual.

Pre-medical students assimilating such a course as is here represented would certainly be more than ordinarily prepared to undertake the modern problems of medical physiology and physiological chemistry, and to appreciate better their application to clinical medicine.

HENRY LAURENS, Ph. D.

Children Handicapped by Cerebral Palsy: By Elizabeth Evans Lord, Ph. D. New York, The Commonwealth Fund, 1937. pp. 105. 9 illus. Price, \$1.25.

This book summarizes Dr. Lord's experience gained from the examination and follow-up of more than 300 cases of cerebral palsy, popularly called birth injury. It facilitates more accurate diagnosis and prognosis of the mental and physical disabilities of children handicapped by cerebral palsy so that the child's special educational needs may be met so far as possible. It aids in recognition both of special abilities and the physiological and psychological difficulties which must be faced

realistically if teachers and parents are to avoid the excessive pressure which would result from ill-founded optimism.

The author discusses the psychological problems in the training, management and guidance of children suffering from birth injuries, and devotes special chapters to the emotional problems of child and parents, and to the teacher's problem. The study was carried on over a period of years sufficient to permit the checking of the results of psychological and physical examinations against the practical criteria of subsequent educational and social outcome.

Dr. Lord has reported in this book the results of many years of painstaking work dealing with the psychological appraisal of cases of cerebral palsy in children attending the muscle training clinics of the Children's Hospital in Boston. She not only observed and tested the children at the clinic, but followed them beyond the boundaries of the hospital to other institutions, to the homes of rich and poor, to public and private schools.

The information which this book contains will be useful to physicians, psychologists, teachers and parents in meeting the problems encountered in the spastic child.

ROBERT A. STRONG, M. D.

Textbook of Pathology: By Sir Robert Muir, M. A., M. D., Sc. D., LL. D., F. R. S. Baltimore, William Wood & Co., 1936. pp. 994. Price \$10.00.

This text represents the fourth edition of a well known English textbook of pathology which was first published in August, 1924. It is planned primarily as a teaching text in medical schools, but, since it covers its subject matter so thoroughly, it may well be used as a reference book also. The various discussions and topics are presented in a simple, clear and concise manner for which so many English medical writers are famous. The book in its present edition has been completely modernized, even to the extent, for instance, of including several paragraphs on the uncommon or heretofore imperfectly described tumors of the ovary which were first definitely recognized by Meyer. The text compares with the best American textbooks of pathology.

H. J. SCHATTENBERG, M. D.

Autopsy Diagnosis and Technique: By Otto Saphir, M. D. New York, Paul B. Hoeber, Inc., 1937. Illus. pp. 342. Price \$5.00.

This manual was written as an aid to medical students, internes and physicians who may be called upon occasionally to perform an autopsy. The method described is a modification of Rokitan-sky's and is one wherein the organs are removed en masse and then dissected. Numerous tables are added to give a rapid and clear differential

diagnosis between various pathological states. These are exceptionally valuable.

Of course the book was not intended to be a textbook of pathological anatomy. It could be used, however, as a supplement to such a textbook. It is well written, concise, clear and should be of great assistance to men working in a pathological laboratory.

JOSEPH ZISKIND, M. D.

The Endocrines in Obstetrics and Gynecology: By Raphael Kurzrok, M. D. Baltimore, The Williams and Wilkins Co., 1937. pp. 488. Figs. 178. Price \$7.50.

Out of the hitherto impenetrable chaos and muddle of nomenclature and experimental contradictions, there has finally emerged a semblance of order. This work of Kurzrok, the text of which the reviewer has conscientiously read from cover to cover, is a very faithful, and extremely successful attempt to present the complexities of endocrinal influence on the male and female sex functions in a clear and consecutive manner.

Though not so stated, the book was probably intended for specialists in the two subjects of the title. Nevertheless, the internist will benefit equally as much, or even more than the gynecologist and obstetrician, because to him usually come first the multitude of female patients suffering, subjectively at least, from numerous complaints, and innumerable variants of one or more ailments. Only too frequently they have their source in some functional or organic disorder of the organs of sex. For this and other reasons the book is a welcome assistant in cases where the doctor puzzles his mind to distraction attempting to classify the symptomatology that presents itself.

Honestly and sincerely, the author has collected and evaluated both the extant experimental and clinical data of others as well as his own, and shown the reader when, where, and how, this information can be applied to the case in hand. He has even gone further. Where the explanation is open to doubt, and this is frequent enough, he sagaciously asks questions himself, and sometimes answers them from the standpoint of the most plausible theory.

There are thirty chapters to the book and quite a bit of the text is devoted to the experimental observations of the author or his associates. They indicate the caliber of the investigator, and exhibit an unusual degree of preserverance and scientific acumen. The suggestion that this or that obscure phase is well worth further investigation, which would doubtless lead to valuable information, indicates an enthusiasm for his subject and a wholehearted willingness to point out leads for other workers, an attitude of mind not very frequently encountered.

The chapters and sections on the chemistry of

the sex hormones are an extremely welcome addition to our understanding of their properties. The sections on functional sterility and the final chapter dealing with laboratory procedures are both exceedingly interesting and helpful.

It is futile to point out for discussion minor defects in diction, laxness or oversight in proof reading, and the rather too frequent use of synonyms. Those who are in any degree familiar with endocrinal nomenclature will not be confused; and, they do not in the least detract from the value of the contents. No single volume specifically dedicated to the subject of sex and the endocrines, in English at least, is known to the reviewer. Kurzrok has placed at our disposal a most valuable and important contribution.

LEONARD C. SCOTT, M. D.

Technic of Local Anesthesia: By Arthur E. Hertzler, A. M., M. D., LL.D., F. A. C. S., 6th ed. St. Louis, Mosby, 1937. pp. 284. Price \$5.00.

The plan on which this book is written could only be accomplished by one with vast experience which allows him to select the salient points of local anesthesia and also include his operative technic.

As stated in the preface of the third edition, "Since the planning of the operation is more difficult than the technic of anesthesia, I have endeavored to present the difficulties likely to be encountered in order that the beginner may take stock so as to determine whether or not his experience warrants the undertaking."

Similar to other books on local anesthesia, each chapter describes the technic for different regions of the body. Unlike other texts, the author does not go into detail but touches only the high spots of the subject. The illustrations, of which there are 142, are well selected.

In presenting this sixth edition the author has shown where spinal analgesia has replaced local for operations below the diaphragm.

This book is excellent for one to refresh his knowledge on local anesthesia, but not as a book of reference.

EMIL BLOCH, M. D.

Treatment in Psychiatry: By Oskar Diethelm, M. D. New York, The Macmillan Company, 1936. pp. 476. Price \$4.00.

This is a well-prepared and ably-written book of seventeen chapters, preceded by a preface introduction, followed by a well-arranged index, which deals essentially and in toto with treatment in psychiatry. In each chapter is given the treatment indicated in the detailed illnesses. There is a marked psychoanalytic content permeating the

leaves. The results of these treatments, when applied intelligently and in the proper hands administered by those capable and thoroughly trained, would no doubt add much to the efficacy of psychotherapy.

This volume should make collateral reading for the general practitioner, likewise a textbook to be used by neuropsychiatrists, especially those dealing with psychoanalysis exclusively.

WALTER J. OTIS, M. D.

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DIABETES

A SYMPOSIUM*

EXPERIENCES WITH PROTAMINE INSULIN†

I. I. LEMANN, M. D.

NEW ORLEANS

From the very earliest days of the insulin era attempts were made to improve the technic of the new therapy. Exclamations were prompt and loud over the frequent use of the hypodermic needle for the remainder of the life of the patient, for it was foreseen and feared that patients would rebel. All available other routes were therefore tried. Attempts at neutralizing or inhibiting the destructive action of the digestive juices were all in vain, indeed it was shown experimentally that if insulin escaped digestion in the stomach subsequent absorption from the intestine would be unreliable. Insulin was sprayed or dropped into the nose; it was instilled into the rectum; it was rubbed into the skin. All of these methods were proved impractical and useless. Even after the profession became reconciled to the conception that insulin could be given only hypodermatically or intravenously, and after fears had been calmed that patients could not be reconciled to the "hypodermic life," it became evident that improvements in the hypodermic therapy were desirable, and in some cases even imperative.

Insulin when injected by hypodermic begins to have its effect usually within half an hour, and is likely to have its maximum effect in

about an hour, and the total effect is usually ended within a period of two to three hours. There are exceptions to this general rule, and there are cases where the effect of insulin is more prolonged and where hypoglycemia occurs many hours after the injection of insulin; in general, however, it may be stated that the effect of insulin is relative explosive, occurring rapidly and disappearing rapidly. With this must be contrasted the effect of endogenous insulin, the production of which seems to be so continuous and so exactly balanced with the needs of the organism that at no time is there a relative want of insulin or a relative excess as would be indicated by hyperglycemia and glycosuria, or on the other hand by hypoglycemia and the usual phenomena accompanying it. It is only in rare cases that a spontaneous hyperinsulinism occurs, and the most aggravated of these occur in patients who are victims of adenomata of the pancreas with resulting hyperactivity of the insulin function. The flow of endogenous insulin, therefore, is continuous and smooth, whereas the effect of exogenous insulin is sudden and jerky. To produce the effect of endogenous insulin, the exogenous insulin would have to be administered in small doses frequently. It is at once apparent that such a plan is impractical. It was, therefore, natural that a method of hypodermic injection be sought which would create a depot from which the insulin would be given off slowly and gradually throughout long periods of hours. The constant difficulty in arranging the timing of insulin injections and of meal hours so as to avoid on the one hand significant glycosuria, and on the other hand hypoglycemic reactions, was and is the stimulus to the discovery of such a method. No one who has witnessed the dread of mothers that their children might have (as

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*The following four papers were presented as a symposium before the Orleans Parish Medical Society April 12, 1937.

unfortunately they do have) insulin reactions in their sleep can fail to be impressed that great as the advantages of insulin are there have remained undoubted difficulties.

EFFECTS OF PROTAMINE INSULIN

In January 1936, Hagedorn and his associates¹ announced that after a long series of experiments (vaguely reminiscent of the famous series of 606 leading up to the announcement of arsphenamine by Ehrlich) they had succeeded in producing a modification of insulin which complied with the requirements I have outlined in the previous paragraph. The product was the result of a combination of insulin with protamine derived from the sperm of certain fish. During the course of the past year investigations, particularly in this country, have developed a still further improvement by the addition of zinc to the protamine insulinate. I have no time, nor is this the place, for a survey of the experimental data already published in the literature. I refer briefly to only a few of the most fundamental: "The failure to obtain delayed reaction after the intravenous administration of protamine insulin is further evidence that the prolonged activity of the compound which follows subcutaneous injection depends upon its delayed absorption."² Ocular proof of the slow absorption of protamine insulin was given by Beecher and Krogh.³ By aid of a Sanderson Clark chamber inserted in the rabbit's ear they studied the rate and method of absorption of insulin and protamine insulinate. Ordinary insulin precipitated at its iso-electric point disappeared from the lymphatics in forty-five minutes. Protamine insulinate disappeared from the lymphatics in about five hours. In their communication Hagedorn and his associates¹ proposed that protamine be given at night and ordinary insulin in the morning, and their first clinical trials were based upon this arrangement. In the same number of the *Journal of the American Medical Association* appeared a communication from the Joslin Clinic⁴ providing confirmatory evidence of the claims of Hagedorn. Since then further clinical trials have demonstrated that other arrangements of protamine insulin and regular insulin may be more advantageous. Some patients, it has been found, can be adequately treated by the ad-

ministration of a single dose of protamine insulin once a day. In others this single dose must be supplemented by an injection of regular insulin at the same time but at another site. This supplementary dose of regular insulin takes care of the hyperglycemia which may exist for a brief period of the twenty-four hours through which the single injection of protamine does not extend. In other words the protamine insulin acts slowly and while we are waiting for this action the regular insulin has its prompt and transitory effect. It has been repeatedly reported that the effect of protamine insulin may be extended over twenty odd hours, and in some cases there is evidence that it may extend over several days. In another paper Joslin and his associates⁵ reported that they had seen protamine insulin act so slowly that the full influence did not become manifest for five to six days in a patient who had been put on the new preparation. They had given as much as 120 units of protamine insulin with 120 units of the old insulin simultaneously to a woman aged 36, who for the previous six months had required 500 units of the old insulin in four doses daily.

PERSONAL EXPERIENCES

I wish now to report upon my experience with protamine insulin* in twenty-six patients. Their ages ranged from three to sixty-eight; first decade two patients, second decade seven patients, third decade four patients, fourth decade seven patients, fifth decade two patients, sixth decade three patients, and the seventh decade one patient. The diet for the adult patients ranged from 120-200 carbohydrate, 50-80 protein and 80-100 fat. My usual custom has been to divide the carbohydrate one third, for each of the three meals. One child, aged three years, took a diet averaging 110-120 carbohydrate, 40 protein and 60 fat. The other child took 140 carbohydrate, 60 protein and 90 fat. My experience has been eminently satisfactory and most promising. All of the patients have remained on the preparation with the exception of four. Of these one, a child aged seven, was

*I wish to express my appreciation to Eli Lilly and Company, E. R. Squibb & Sons, and Sharp & Dohme for supplying me with the protamine insulin for clinical trial during 1936.

taken to his home a hundred miles away before the dose could be adjusted properly. Two adolescents were returned to ordinary insulin at a time when I had an inadequate supply of protamine insulin. One adult patient refused to give his cooperation in the period of adjustment of the new dosage; for this reason no prolonged attempt was made to maintain him on protamine insulin. In all but three patients I have been able to reduce the number of injections from two or three to one a day. It is true that of those who receive protamine once a day, eight take both protamine insulin and regular insulin simultaneously. I wish to emphasize that these simultaneous injections are given at different sites and with different syringes. If regular insulin is mixed with protamine insulin the effect of the combination is that of protamine insulin only, and not at all that of regular insulin. It is my custom in shifting from old insulin to protamine insulin to give as a single injection of protamine insulin from two-thirds to three-fourths of the total amount of insulin previously administered in the two, three or four injections in the twenty-four hours.

My experience has taught me to observe several precautions. The first of these is that, in changing from regular insulin to protamine insulin, some regular insulin should be supplied at least the first day. It must be remembered that the effect of protamine insulin is slow and if the total amount of insulin injected in a day be supplanted by a single dose of protamine insulin administered in the morning, the patient will go for at least half a day or perhaps longer without insulin effect. This is equivalent to the sudden withdrawal of insulin and is likely to precipitate ketosis. I had one such experience: A patient who had been taking 48 units of regular insulin in two doses was put on 32 units of protamine at one injection in the morning. By late afternoon she had epigastric pain and was vomiting. The urine contained sugar, acetone and diacetic acid. The prompt administration of regular insulin relieved her symptoms and within a short time she was quite all right. I believe, therefore, that if the total amount of insulin throughout the day is more than 40 units, on the first day

order in addition to the protamine insulin a supplementary dose of regular insulin at the same time, or be prepared to give regular insulin once or twice later in the day, depending upon the appearance of sugar and ketone bodies in the urine. The next caution is one I have already alluded to, namely that the full effect of the preparation may not be obtained for a number of days after its use has been instituted.

The same patient who developed ketosis so promptly after the inauguration of the protamine insulin therapy was sent home after two weeks' observation with instructions to take protamine insulin, 32 units in the morning and 42 in the evening. On this I was able to keep her urine sugar free, and the blood sugars were: February 22, 1937, 2:30 p. m. 266 mg. per 100 c.c.; 9:15 p. m. 220 mg. per 100 c.c.; February 23, 1937, 8 a.m., 89 mg. per 100 c.c.; February 25, 1937, 2 p. m. 200 mg. per 100 c.c. After she was at home for a week (some 200 miles away) her husband telephoned me that she had had severe hypoglycemic reactions and that it had been necessary to administer glucose intravenously in order to bring her out of coma. It has been necessary subsequently to reduce her insulin to 28 units of protamine plus 10 units of regular insulin administered simultaneously in the morning. With this arrangement the urine remains sugar free throughout the twenty-four hours. This insulin is to be contrasted with the total amount of old insulin that this patient took formerly, namely 48 units in two doses. A third precaution I would advise is that the patient should take a bedtime repast of 15-20 grams of carbohydrate (a glass of milk with two or three crackers, for example). This is to buffer the blood sugar reducing action of the protamine insulin and to avoid the hypoglycemic reactions that have sometimes occurred in the hours between midnight and morning, some twenty hours after the administration of the protamine insulin.

The most striking example of the value of the new insulin I have had is in the case of G. S., female, aged 19, under observation since the age of 12. Originally she had been an underfed, unhappy child with double cataracts. She

is now a well developed, happy, self-supporting young woman, rendered so by the successful operations on her eyes and the constant use of insulin. She had had many difficulties on regular insulin, having had to be admitted several times for diabetic coma, and many times for severe insulin reactions. In spite of repeated hospitalization for weeks and even months at a time, I had never found it possible to regulate her insulin so as to bring her fasting blood sugar to a reasonable limit without throwing her into insulin shock some other time of the day. Her fasting blood sugar had persistently been over 300 and sometimes as much as 400 mg. per 100 c.c. I had tried three and four doses of insulin a day, and had distributed it in all kinds of arrangements, all in vain. This patient, therefore, was an ideal one for protamine insulin. At the outset it was necessary to give her as much as 120 units of protamine in two doses daily. She is now taking only 30 units of protamine once a day.

During the six years Mrs. H., aged 32, had been under my care I had had great difficulty in adjusting the insulin dose. Whenever the dose was increased to insure freedom from glycosuria throughout the day, the patient would have insulin reactions. A curious observation was that for the past year she had had recurrent diarrheas for which no cause could be found in spite of repeated searches for ameba, parasites and *B. dysenteriae* including cultural methods. Gastric analysis, proctoscopy, and roentgen ray examination yielded no information. The patient reported the observation that whenever insulin was pushed to the point of insulin reaction her diarrhea would be checked. It was all the more desirable, therefore, that an approximately normal blood sugar and freedom from glycosuria be obtained. With protamine insulin it has been possible to control the glycosuria as it had never been previously done with ordinary insulin. There are no insulin reactions and since the glycosuria has been controlled the diarrhea has ceased and has not returned.

The reduction of the number of injections per day, therefore, does not represent the total

improvement offered by protamine insulin over the old insulin. The more continuous steady absorption of the new preparation makes insulin reactions less probable. It also avoids the "wastage" of insulin to which other observers have referred, namely the administration of insulin in periods where it is not needed and where some of the insulin seems to be lost by being excreted through the urine.

SUMMARY

Enthusiastic as I am about the new preparation and hopeful as I am about further improvements in therapy along this line, I must not fail to say that the arrival of protamine insulin has not simplified the steps necessary to be taken to establish the proper dose for each patient. The method is still one of trial and error just as it has hitherto been for the old insulin. Fortunately some of the difficulties of technic of the administration such as the mixing of the protamine with the insulin which was necessary at first have now been done away with. The material as now sold comes already mixed, and ready to be used, and the technic is just as simple as that of old insulin. Some of my patients have complained that the protamine insulin injections have left painful lumps. Others, the majority, have had absolutely no complaints. I trust that further improvements will prevent the painful areas.

Finally, it may be asked can protamine insulin be used in the treatment of diabetic coma? It has been so used in connection with old insulin. In the present state of our knowledge I should prefer to rely upon the prompt action of old.

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THE PRINCIPLES OF SURGERY ON DIABETIC PATIENTS†

URBAN MAES, M. D.
NEW ORLEANS

At first glance it seems distinctly on the gloomy side to say that insulin has made it possible for the diabetic patient to share with those not so afflicted all the ills to which flesh is heir. Actually, it is an encouraging reflection. That the diabetic is now subject to all the changes and chances of this mortal life, including, from our special standpoint, all the surgical contingencies, is definite proof of how greatly his span of life has increased during the insulin era. Indeed, to paraphrase Sir William Osler, if the diabetic can be taught to "make friends with his ailment," he may, paradoxically, live to a riper old age than his non-diabetic brother, whose blithe disregard of all the rules of hygienic living often sends him to an early grave.

Lord Moynihan's statement that no patient should be permitted to die of one disease merely because he happens to have another disease can be applied with peculiar propriety to the diabetic who develops a surgical condition, as, according to Joslin, one in every two or three is now doing. Since the advent of insulin the diabetic need not be denied surgical relief for any surgical condition, be it urgent, essential or purely elective. That does not mean, however, that there is the slightest justification for regarding lightly any surgery practiced upon him, even the so-called minor surgery. The first principle of safe surgery in these circumstances is the realization that the patient is always a potentially if not an actually poor risk, that his margin of safety is always slight.

PROBLEMS OF THE DIABETIC

Even if the diabetic state be under the proper control, which it very often is not, the diabetic presents certain peculiar problems. For one thing, he is quite as prone to delay seeking medical consultation when he is ill as is his normal brother, the difference being that delay in the diabetic, particularly when infection enters the picture, has far more serious con-

sequences. Pain, vomiting, diarrhea, starvation, dehydration, fever and similar accompaniments of surgical states aggravate his chronic metabolic disturbance. Because of his subnormal resistance any superimposed strain is *per se* a serious strain. If he is advanced in years, as diabetics today very often are, he may be the subject of cardiovascular, cardiorenal or other degenerative diseases. Arteriosclerosis is practically always present; Eliason says that every diabetic develops it by the fourth decade, others say that every diabetic develops it within five years of the onset of his diabetes. Vascular accidents, therefore, are to be expected, and these patients always show, in addition, a definite predisposition to hypostatic pneumonia. Furthermore, as Joslin points out, there is a growing realization that Claude Bernard was right when he emphasized the prominent rôle of the liver in diabetes, a serious consideration in view of the increasing realization that all surgery implies more or less strain upon the liver. It is obvious, therefore, that the diabetic, partly because of his organic disease and its possible complications, and partly because of the effect of his surgical state on his organic disease, is a potentially poor risk for surgery, however well he may be prepared, and an exceedingly poor risk if his preparation be not adequate.

If the diabetic be properly prepared and wisely handled, the results of surgical procedures are usually comparable to those secured for the same conditions in non-diabetic patients. But if delay be a factor, and particularly if infection be present, the situation is very different. When infection is present, as Foster says, the road to coma lies open. It does. Within a year I saw three patients die on my own service from infections which were originally slight in themselves but for which treatment was too long delayed. Infection disrupts further an already disturbed metabolism, in its presence insulin loses much of its effectiveness, and a vicious circle is set up which must be promptly interrupted if the patient is to be saved.

COOPERATION BETWEEN INTERNIST AND SURGEON

I do not know who made the remark that medicine is not a game of solitaire, but it is another aphorism peculiarly appropriate to the

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surgical diabetic. Both internist and surgeon must run the race together if the patient's best interests are to be served. Above all, they must realize the dual risks of delay and infection. When the diabetic develops a surgical condition, no quarter is given, no odds are allowed, because he has diabetes. In its presence appendicitis just as surely goes on to rupture and peritonitis, hyperthyroidism just as swiftly burns up the tissues, carcinoma kills just as inevitably and as mercilessly as if the diabetes were not there. The only difference is that the process is practically always quicker; that fact the internist and the surgeon must never forget.

Furthermore, the internist must be exceedingly careful not to permit his patient to develop these or any other surgical conditions, and even to die of them, without noticing that they have developed. That is no rash overstatement. I have seen such errors revealed only at autopsy. It is sadly true that perhaps the most unsafe place in the world to develop one disease is in the hospital under treatment for another, and I fear that the same state of affairs holds for the ambulatory patient under the care of a physician for some chronic disease.

The actual preparation of the diabetic for surgery is entirely the internist's business. It is no casual performance. It requires skill and experience. It is almost mathematical in its exactness. This is one time when laboratory findings are more important than clinical observation. The preparation must be entirely individual. It must vary with the severity of the constitutional disease, with the duration and severity of the surgical state, with the patient's age and general condition, and with the length of time available for preparation. The demands of emergency and of elective surgery differ widely, but in general it may be said that the purpose of all preparation is to reduce the blood sugar to an approximately normal level and to keep the urine entirely free of sugar and ketone bodies. The amount of insulin and when it should be given, the character and amount of the diet, are left to the internist, who frequently must walk warily between acidosis and its risks on the one hand and hypo-

glycemia and insulin shock on the other. Rudy's paper calling attention to these latter dangers, especially in the aged, is timely.

In addition to such special preparation, the diabetic needs fluid to maintain a proper fluid balance, and in view of the existing liver damage because of his disease and the additional liver trauma to be inflicted by operation, it is frequently imperative that his storage of glycogen be increased. Glucose may safely be administered for this purpose at the discretion of the surgeon, who can rely upon his medical confrère to buffer it properly with insulin.

It seems scarcely necessary to point out that since the diabetic is always potentially below par, the operative act should produce as slight a degree of shock and as little loss of blood as is possible. Unnecessary trauma must also be avoided, in view of the susceptibility to infection of the tissues. For that reason local analgesia, in my opinion, is usually contraindicated. Clinical and experimental evidence has proved the unwisdom of ether for the diabetic except in extraordinarily skilful hands. Spinal analgesia has a wide field, but should be used with extreme caution in aged, debilitated, shocked and hypotensive patients. These contraindications are now quite generally accepted, and it is realized, too, that pulmonary complications are at least as frequent after this type of anesthesia as after the inhalation varieties. My personal preference is for ethylene or cyclopropane, both of which permit a high admixture of oxygen.

The properly supervised diabetic should present no difficulties during convalescence from the standpoint of his organic disease. The co-operation of the internist is necessary as long as the patient is in the hospital, and that should be until he is well. The healing process is notoriously slow in diabetics and partially healed wounds are an easy prey to infection. Furthermore a lapse from a strict regimen of diet and insulin may have serious and even fatal consequences. Careful supervision until complete recovery is the only safe plan.

ACUTE ABDOMINAL CONDITIONS

Acute abdominal conditions in the diabetic must be distinguished from the type of dia-

betic acidosis described by Joslin, Root and White, Beardwood and Bothe, and others. This type of acidosis, unlike true diabetic coma, frequently bears all the hallmarks of acute abdominal disease, including fever and leukocytosis. This was true in 96 of 136 such cases recently reported by Beardwood and Bothe. These authors emphasize a fact which deserves reiteration, that acute abdominal disease in the diabetic often presents such slight local and constitutional reactions that it may be entirely overlooked. It is a delicate matter to decide whether one is dealing with such conditions as acute appendicitis, acute pancreatitis or intestinal obstruction, in which surgery is life-saving, or with a false emergency which is really diabetic acidosis and in which exploration will simply add to the risk. There is no doubt, on the other hand, that it is possible to overlook abdominal disease under these circumstances. Root has recently reported 26 cases of diabetic coma in which autopsy revealed four cases of unsuspected acute pancreatitis, an experience which leads him to say that this disease should be considered as a possibility in any case of diabetic coma which does not respond promptly to the standard treatment.

The possibility of pancreatic involvement, for that matter, is an excellent reason for resorting to surgery for gallbladder disease associated with or superimposed upon diabetes. The coincidence is rather frequent. McKittrick and Root report it in nearly half of 49 autopsies on diabetics over twenty-five years of age, and stress the necessity for prompt surgery for the biliary disease if for no other reason than to eliminate its deleterious effect on the diabetic condition.

GANGRENE

Gangrene is the most frequent and most fatal complication of diabetes. It frequently presents problems of extreme difficulty, more frequently, of course, in a public hospital than in private practice, where prophylaxis is more generally the rule. Whether to be conservative at all, how long to be conservative, when to amputate, where to amputate, how to amputate, these are questions which cannot be settled by dogmatic generalizations. They are the problems of the individual patient. In addition to the extent of the local necrosis and the ever-

present possibility of infection in the characteristically moist gangrene of diabetes, one must consider also the patient's age and his social status. One must remember how quickly this type of gangrene leads to septicemia. One must remember that today gangrene tends to occur at a considerably more advanced age than it once did, and must be prepared to cope with the complications which the mere age of the subject introduces. The instinct to be conservative, to avoid mutilating procedures, is highly commendable, but, as Veal has pointed out in his study of gangrene in Charity Hospital, it is the obstinately conservative surgeon who adds to the mortality of diabetic gangrene, adds to it just as does the ignorant patient who delays presenting himself for treatment or who refuses surgery when it is offered to him. The indications for amputation have been exceedingly well presented by McKittrick and Root, McNealy and others, and I shall merely say here that my preference is for amputation at the site of election whenever that is possible, and for the Kocher or en saucisson technic.

DIABETES WITH OTHER DISEASES

Diabetic patients are peculiarly susceptible to boils, carbuncles, furunculosis and similiar infections which would be of small consequence in normal individuals but which are potentially very serious in them because of their violent reaction to infection. Careful supervision of the diabetic state and prompt treatment of the local lesion are essential, though that treatment need not necessarily be surgical.

The relationship between diabetes and hyperthyroidism may be open to debate, but of the deleterious effect of the coincidence there can be no possible doubt. Both are diseases in which disturbed metabolism is the underlying pathologic change. The diet of the patient with diabetes can be controlled, but the patient with hyperthyroidism, as Joslin vividly says, indulges in endogenous overeating twenty-four hours a day. The astonishing improvement in the diabetes which often follows thyroidectomy is convincing proof of the effect of the one disease upon the other, and whatever one may feel about the nonsurgical treatment of hyperthyroidism, these are not the circumstances in which to practice such theories. The hepatic

damage which is now known to exist in both these conditions is an additional reason for urging prompt treatment of the thyroid condition.

The diabetic person who lives to middle age or beyond thus lives into the so-called cancer age, and while statistics on this subject are few, there seems no doubt that he is peculiarly likely to develop carcinoma of the pancreas. Conlin found this type of malignancy, for instance, in four of 11 cases of cancer, and McKittrick and Root found it in 12 of 37 cases, the diabetes preceding the cancer by some 3.7 years. The incidence of all varieties of cancer in the diabetic patient is increasing, according to Joslin, which makes the duty of his physician clear. The diabetic must not be permitted to die of malignant disease while his physician looks on helplessly, either because he is so concerned with the diabetes that he has overlooked the malignancy, or because he is fearful of the combination of surgery and diabetes.

SUMMARY

It might be well to quote at the end of this paper as at the beginning Lord Moynihan's aphorism that the patient with one disease must not be permitted to die of another merely because of the coincidence.

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DIABETES IN CHILDHOOD

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NEW ORLEANS

The twentieth century has brought to the juvenile diabetic his first ray of hope for an increased life expectancy. Insulin, the therapeutic savior of our era, has already proved efficacious in prolonging the lives of children afflicted with pancreatic glycosuria. Prior to the discovery of insulin, the mortality in childhood approached 100 per cent while, today, after fifteen years of usage, death from diabetes mellitus in the juvenile has been reduced to a negligible per cent. Historically, there is no recorded description of this disease until the first century. From this time on, interesting and outstanding accomplishments have been reported and gradually there has been added to our knowledge observations and discoveries which, in reality, have paved the way for our present-day acceptance of the pathology and treatment of this disease. One cannot forego the privilege of mentioning briefly those who have contributed to furthering the knowledge of diabetes mellitus through the many centuries.

HISTORICAL

In Chinese literature there is mention of this disease 600 years B.C. and the saccharine nature of the diabetic urine was known to the Hindus. Polyuria, as a symptom, was noted "in Papyrus Ebers which was already old in the time of Moses." In the Old Testament and the Talmud, Jews were accredited with having boils, carbuncles, and bulimia which today lead us to infer that they, like the Hindus, were prone to this disease. Symptomatology was found in the writings of Celsus (25 A.D.).

Areteus (30 A.D.) named the disease. Paracelsus (1493) evaporated the urine of a diabetic patient, which yielded four ounces of salt. Chyluria was recognized in the 16th century by Dodonaeus; the hereditary character by Morton in 1696. During this period the sweet taste of the urine and later not only of the urine but also of the blood serum

was discovered by Thomas Willis and Dobson, respectively; lipemia was noted by Johann Baptista van Helmont. Time marches on—and the 18th century finds Ambrosiani and Maitland isolating the fermentable sugar from the blood. In 1788, an outstanding contribution was made by Cawley in associating pancreatic pathology with diabetes mellitus, in variance with Galen (130 A.D.) who attributed it to a dysfunction of the kidneys. Shortly afterward, the dangers of the carbohydrate diet were described by Rollo (1796). The 19th century witnessed the actual identification of glucose by Chevreul (1815); that starch digestion normally yielded sugar (Tiedemann and Gmelin, 1827); polarimetric determination (Biot); qualitative test (Trommer) as well as that of Fehling, and the description of diabetic coma (Kussmaul, 1847); all antedated 1860. It was during this period also that Claude Bernard demonstrated experimentally the relation of liver to sugar formation, initiating, as it were, the modern physiologic conception of the disease.

The contributions of Magnus-Levy, Naunyn, von Noorden, Allen, Joslin, and Zuelzer; of Banting, cooperating with Macleod, Best and Collip and, finally, of Hagedorn partially completes the roll of honor of those who have made present day treatment of diabetes possible.

Joslin has seen fit to divide the modern conception of diabetes into eras. Through modesty, perhaps, he has withheld placing his name where it justly belongs. Therefore, his original table has been somewhat modified:

The Ancient Era 600 B. C.	— 1897
The Naunyn Era1897	— 1914
The Allen-Joslin Era1914	— 1922
The Banting Era	{	1922 — 1925 (early)
		1926 — 1929 (middle)
		1930 — 1935 (later)
The Hagedorn Era1935	—

PRE-INSULIN MANAGEMENT

From 1900 to 1914 the influence of the Strausburg school and later of von Noorden was still dominant though somewhat

more scientific. In many instances the patients became sugar-free. This was accomplished primarily by feeding a diet high in fat, as much as 200 grams being administered daily to strengthen the patient. Necessarily, many cases would ultimately reveal a failing tolerance and death would result from coma. Alkalies were given "ad nauseam." Then, the Allen diet, 1914-1922, came into vogue, which consisted "of fasting to produce sugar-freedom and undernutrition to maintain it." The Joslin modification followed, namely, the elimination of fat; the gradual decrease in protein and the slow reduction of carbohydrate. "It was not necessary to fast the patient." The management of the diabetic child first received attention in 1903 (Frolich). His method and Langstein's (1905) management of juvenile diabetes were according to the methods of von Noorden. Kleinschmidt (1916) modified the above by restricting the protein and advocating vegetable days and alkalies for acidosis. "From 1914 to 1922, the under-nutrition methods of Allen and Joslin were employed in children."

THE INSULIN ERA

Zuelzer (1908) made an unsuccessful attempt to isolate insulin from extracts of the pancreas.

"Insulin, the hormone of the pancreas which regulates carbohydrate metabolism was discovered in 1921 by F. G. Banting with the assistance of C. H. Best while working under the direction of Professor J. J. R. Macleod in the Physiological Laboratory of the University of Toronto. Insulin is a hydroscopic powder, soluble in water and 80 per cent alcohol, but insoluble in 92 per cent alcohol and acetone, and precipitated by half saturation with ammonium sulphate, by kaolin, charcoal, and ammonium sulphate. Its solubility depends largely on the hydrogen-ion concentration. The iso-electric point of precipitation lies between 5.5 and 6.

"Insulin is a protein, according to Dudley (1923), and he is led to this conclusion because of: (1) its ready absorption, (2) its

failure to pass through an ultra filter, and (3) its rapid digestion by trypsin and particularly by pepsin Insulin will keep for a year or more even in warm climate . . .”

The first patient to receive insulin at the hands of Banting and Best was on January 10, 1922.

White (1936), reviewing the findings of Hagedorn relative to protamine insulinate, states: “The new protamine insulin or Danish insulin retard, however, will revolutionize therapy, and the severe diabetic will profit most. After three years of the disease, all youthful and severe cases show an elevated fasting blood sugar well over 300 milligrams. From the third year of duration on the blood sugar becomes stabilized. There is no tendency “for increasing severity of diabetes indicated by increasing fasting hyperglycemia. For several years Hagedorn has worked upon this hypothesis. If insulin is combined with a base, injected as a suspension the minimum solubility of which occurs at the hydrogen-ion concentration of body fluid, the precipitate will be slowly broken down and active insulin released in small quantities over a long period of time, more nearly simulating the insular secretory function of the normal pancreas. In order, he tried the tri- bi-, and mono-protamines, and found that a new one, a monoprotamine which has never been described in the literature, derived from the ripe sperm of the American *Salmo iridus*, provided the minimum solubility at the desired hydrogen-ion concentration, 7.3 compared with 7.7 of our regular insulin hydrochloride.

“For two years Hagedorn has been using this in Copenhagen. Our first experimental lot came to us in July, 1935, and we had an opportunity to use it with 19 patients. Our own work has been merely to confirm the results reported by Hagedorn. This insulin remains in the body nearly twice as long as ordinary insulin. The drop in blood sugar is very gradual, and insulin reactions are reduced to the minimum. Protamine in-

sulin will not replace the regular insulin. Because of its slow absorption it is not of great value in crises such as diabetic coma or infections. It may not replace regular insulin entirely even in the treatment of severe diabetes. At first, the best results were obtained by using the regular insulin in the morning, when we want rapid action, and insulin retard in the evening. By so doing there is just a gradual fall of blood sugar and the patient awakens with a normal fasting blood sugar. More recent experiments indicate that complete replacement is possible”.

JUVENILE INCIDENCE

Congenital diabetes is extremely rare but cases, one by Ambard and co-workers, (1925) and the second by Feldmann (1928), have been reported. Diabetes in childhood prior to the twentieth century was seemingly either undiagnosed or else constituted but a small per cent of the number of diabetic cases reported. This is exhibited in the following table:

	Number of Cases	Year
Deweese	3 under 15 mos.	1826
Condie	4 under 14 years	1844
Hauner	1	1850
Kitselle	1 infant few days after birth	1852
Kutz	Reviewed literature	1878
	111 cases	
Stern	Reported 75 additional	1890
Knox	7 under 1 year	1852-1896
Bell	1 infant 3 months	1896
Holt	1360 by Pavy- only 8 under 10 years 700 by Prout- only 1 under 10 years 380 by Meyer- only 1 under 10	1898

Fletcher (1907) in 506 cases reported 2.5 per cent were in children under 12 years. Von Noorden (1912) found that from 0.5 to 1 per cent constituted the number of children who had diabetes mellitus in the first 10 years of their life and that 2.5 per cent of his 2,000 patients were juveniles.

Garrod, Batten and Thursfield (1913) conclude that children below 11 years of age constitute 1 per cent of diabetic patients.

Today, in the United States, it is esti-

mated that juvenile diabetes exists in the proportion of one child in each 8,000 children and that there are actually 25,000 who either have diabetes or are pre-diabetic. Whether there is a direct relationship of sugar consumption to diabetes is still undecided, though it is significant that sugar consumption has increased proportionately to the incidence of pancreatic glycosuria in children. In 1926 the average per capita consumption was 109.3 pounds a year; in 1930, 99.3 pounds a year or 124 grams a day. "This means that 18 per cent of the daily menu of the American is made up of sugar. The average yearly consumption of candy in 1929 was 12.98 pounds, or one pound a month," according to Willet and Gray (1930), as reported by White, 1936.

ETIOLOGY

The sex incidence finds a slightly larger distribution in the male than in the female, and children residing in cities constitute a much larger per cent than those living in rural communities.

The racial distribution is still one of dispute. White (1932) reports 8 per cent Jewish children as compared with 92 per cent Gentile. Abt (1923) has treated from seven to eight non-Jewish children as compared to one Jewish child. Joslin (1928) stated that Hebrew children constituted 6.1 per cent of his cases. In my own practice of eight cases that are to be reported, seven were Gentiles and one descended from one fourth Jewish heritage. On the other hand, it is conceded that the susceptibility to this disease among Jews is greater at all ages—Foster (1915); Wallach (1893); Williamson (1898); von Noorden (1912); Joslin (1917). Wallach (1893) of Frankfurt, Germany, found that the proportion of deaths from diabetes to the total deaths was six times greater among the Jews than among the other inhabitants.

Opinions the world over favor well-to-do children as being more prone to diabetes in contrast to those in moderate circum-

stances. Unquestionably, rich and better food, limited exercise, and greater nervous tension have played their part.

Trauma, such as operative obstetric interference, where injuries affect the head and abdomen primarily, can be accepted as a possible factor. Higgins and Ogden (1895); Abt (1911); Hoeninger (1911); have found evidences to substantiate the belief that trauma can produce either a transitory glycosuria or diabetes in children. In the child, the involvement of the ductless gland, acute infection, syphilis, dietetic excesses and obesity have had no definite substantiation as being directly responsible for the onset of diabetes mellitus. Ladd (1926) associated six of his 35 juvenile diabetics following an acute infection.

White (1936) has rightly stated that the hereditary nature of diabetes has yet to be proved. Time does not permit discussing the various methods of investigation in attempting to prove inheritance in its relation to diabetes. "The actual evidence in favor of the theory that the potentiality for developing diabetes is inherited rests primarily with four facts: (1) The almost simultaneous occurrence of diabetes in similar twin mates; (2) the greater incidence of diabetes in the members of a diabetic than in a control family; (3) the demonstration of Mendelian recessive ratios in a large series of cases selected at random, and (4) in presumably latent cases."

PHYSICAL FACTORS

By way of digression, the diabetic child's physical makeup should be known and appreciated. The muscular efficiency of those afflicted with disease is appreciably less than normal but can be made to approach normalcy by proper diet, insulin and physical therapy (Fitz and Murphy 1924).

Morrison and Bogan (1927), after a roentgen study of the bone development in diabetic children, drew the following conclusions:

1. Bone development is in advance of

the chronologic age in children with diabetes of recent onset.

2. Bone development is below the chronologic age in children with diabetes of long standing.

3. Narrowness of the shaft and thinness of the cortex characterize the diabetic child of long standing.

4. Bone atrophy occurs in certain number of children who develop diabetes before the ninth year, but has not been found above that age.

5. Transverse striae of the bones are found in a larger percentage of diabetic children than of normal children, but we failed to associate a transverse line with the onset of the disease.

This study was made upon patients of Dr. E. P. Joslin.

THE QUESTION OF MARRIAGE

Should these diabetic children later marry? Joslin believes that the boys can and will at 21 years of age or over; the girls should have diabetes ten years before they assume so much responsibility. The diabetic girl who grows into womanhood and then approaches motherhood must be made conscious of the fact that stillbirth is a common association of diabetic women. Offergeld (1909) showed that 51 per cent of the children born of 57 diabetic women were stillborn; that 11 per cent died soon after birth; that 7 per cent died in infancy from one cause or another, making a total mortality of 66 per cent. With the advent, however, of the insulin era it would appear that the per cent of stillbirths will be materially decreased though White (1932) says that "up to the present time only 50 per cent of the offspring of diabetic women have lived."

Lemann (1927) gives the following comparison of statistics taken from the records of Charity Hospital in New Orleans.

INCREASE OF INCIDENCE OF DIABETES CHARITY HOSPITAL, NEW ORLEANS					
Admissions to Hospital					
		Total	W.	C.	
1898 —	1909	101,565	61,298	40,265	
1909 —	1919	160,044	92,040	69,004	
1921 —	1926	148,671	91,948	66,673	
No. of Diabetics			Percentage		
Total	W.	C.	Total	W.	C.
64	45	19	0.63	0.73	0.47
194	135	49	1.20	1.40	0.86
439	211	228	3.00	2.30	3.40

To this table may be added the following data: From July 1, 1924 to June 30, 1936 there were 246,014 admissions of which 2346 were diabetic patients, making a percentage of 9.5. There were 2261 adults and 85 children under 12 years of age, or 3.7 per cent.

At the Touro Infirmary, from July, 1933 through December, 1936, there were 388 adult cases and 21 children 12 years and under, or 5.4 per cent.

The exact figures of deaths from diabetes in the Registration States occurring from 1916 to 1935 are published by the Department of Commerce, Bureau of Census.

DR. C. J. BLOOM'S CASES						
Case	Year	Onset	Sex	Age	Outcome	Gentile
1	1911		M	10 yrs.	Dead	*
2	1918		F	11 yrs.	Deserted	*
3	1927		M	18 mos.	Living	*
4	1927		F	12 yrs.	Dead	*
5	1930		M	6 yrs.	Dead	*
6	1931		F	13 yrs.	Living	*
7	1935		F	18 mos.	Living	*
8	1936		M	6 yrs.	Living (¼ Jewish)	*

From 1916 to 1936 there were eight cases of diabetes among 16,853 children or one case from each 2106 children.

Interestingly enough von Noorden (1912) states that heredity is much less marked in infancy, and is more commonly seen in blood relatives whose marriage must be regarded as an endogenous degenerative disease, and Abt (1925) concludes that families affected with diabetes reveal, in succeeding generations, the incidence of diabetes in younger patients.

GENERAL INFORMATION AND DIFFERENTIAL DIAGNOSIS

The care of any patient is a trust, but

the child is an added trust. It has generally been conceded that physical examinations should be held periodically each year of one's life. To this routine, must be added the necessity of obtaining the urine specimen even though the child be an infant, at such a time when the patient is thoroughly examined. In this way, perhaps, diabetes mellitus might be recognized at an early age and, like tuberculosis, will be more successfully treated. The urine can be obtained by the applying of a urinary receptacle, simple in structure. There are certain peculiarities of urine in childhood that should be mentioned; the excretion per pound of body weight is greater than that of an adult; the urine is pale and of low specific gravity at birth and, as the second year is reached, the excretions become proportionately less and the specific gravity higher. The concentration of blood sugar in the fasting state is between 80 to 120 mg. per cent and is maintained with great tenacity (White). It is equally true that the metabolism and utilization of glucose in the normal infant and child is greater than that of the normal adult.

The finding of sugar in the urine and the reduction of Benedict's and Fehling's solutions need not be glucose. The other sugars sometimes found are: (1) Lactose; (2) pentose; (3) levulose; (4) maltose and (5) glycuronic acid. For each sugar there are special tests which, in themselves, would reveal their respective identity. Renal glycosuria is frequently mistaken for diabetes mellitus and is not infrequently met with in childhood. It is a glycosuria independent of diet, a normal blood sugar and an absence of polyuria, polyphagia, and polydipsia. The symptomatology of juvenile diabetes is a difference of degree rather than of kind.

TREATMENT

Joslin (1936) has divided the treatment into four subdivisions: (a) Education; (b) diet; (c) exercise; and (d) insulin—protamine insulin. Necessarily, the question of education and exercise relates to the adult par-

ticularly; in the child the supervision must be in the hands of one who is to guide the destiny of that child, and one alone. This individual will fortunately consciously or unconsciously memorize the essentials pertaining to the care and treatment of the diabetic child and, if the child is old enough, he or she will, if properly tutored, respond wholeheartedly and by degrees through years of treatment will ultimately be able to guide his or her own destiny. Education pertains not only to the family itself, but to the doctor in charge of the patient. Many stress the fact that in clinics where insulin or protamine insulin is administered only one doctor or his representative should care for an individual case. Overactivity on the part of the child must be obviated. On the other hand, the child must be permitted, if possible, to follow a normal life as far as limited exercise is concerned. Additional protection must be sought through immunization against all communicable diseases, where such is possible.

The treatment as far as the diet and administration of insulin and protamine insulin is concerned is, as someone has stated, distinctly individualistic. No general diet can be given for a particular age, nor the number of insulin units for a particular weight. Before the diet is definitely decided upon, provided the child is old enough to obtain the necessary urine specimens, tolerance tests should be resorted to. Then the caloric requirement of the diabetic child must be determined. From five to eight years 1100 calories are necessary each 24 hours; from nine to 12 years, 1200; and from 13 to 16 years, 1400 White (1932). This includes allowances for basal metabolism, for growth, and activity. White (1932) has deduced from experience that normal growth has occurred when diets were from 30 to 40 per cent above the actual basal metabolism or from 40 to 50 per cent above the theoretical metabolism. Ladd feels that the diabetic child will exhibit normal growth on a diet which is two-thirds of the normal diet.

White (1932) gives the following information, in part, concerning diet:

“The Partition of Diet—The choice of the partition of the diet for the diabetic young or old is today a much debated question. . .

“The partition of our diets has been as follows: From 25 to 50 per cent of the calories were given in the form of carbohydrate, from 10 to 20 per cent in the form of protein, and from 35 to 65 per cent in the form of fat. For a child of five years of age weighing 36 pounds (16 kilos) to whom we wish to give 75 calories per kilogram body weight the quantities of carbohydrate would range from 75 to 150 grams, the protein from 30 to 60 and the fat from 46 to 86 grams. Our own selection of diet would be carbohydrate 100 grams, protein 48 and fat 64 . . .

MINIMAL AND OPTIMAL QUANTITIES OF CARBOHYDRATE FOR INFANTS AND OLDER CHILDREN (MARRIOTT)

	Infants		Older Children	
	Grams per kg.	Calories per cent.	Grams per kg.	Calories per cent.
Minimal	3	10 to 15	2.5 to 3	10 to 15
Optimal	10 to 15	40 to 60	8 to 10	40 to 60

“Restriction of carbohydrate in the diet below 50 grams is not wise for the growing diabetic child. If the carbohydrate is reduced, the fat must be increased and the danger of ketosis is apparent. . . . When more than 6 grams of fat are given per kilogram of body weight, its absorption is defective, a negative balance for cholesterol occurs, and calcium is excreted rather than stored.

“The quantities of fat in the normal diet according to various investigators range from 20 to 50 per cent of the total calories. The range in our diets is from 36 to 60 per cent. . . .

“Protein. The minimal amounts of protein required by children have been placed from 1.8 to 2.3 grams per kilogram body weight, or 7 per cent of the total calories in infancy, to 10 to 20 per cent of the total calories of the older child. . . .”

INSULIN

The amount of insulin which a diabetic

child requires to keep his urine sugar free and his blood sugar normal varies with age, weight, severity of disease, intercurrent complications, as well as with the diet and amount of exercise. As a routine it is best to initiate treatment with a minimum number of units which, according to White (1936), should be as follows: Under five years of age, 3 units three times a day; between five and 10 years, 5 units three times a day; between 10 and 15 years, 10 units three times daily; necessarily the dose is altered each day and through adjustment of time of administration, diet and the number of units, the number of injections is ultimately reduced to two daily. Lest it be forgotten, the weight chart must be carefully watched, for though the child may be sugar free, the amount of food he is receiving might be inadequate to produce a progressive gain in weight. In this connection, one should attempt to keep the weight within 10 per cent of the normal.

PROTAMINE INSULIN

Protamine insulin in the hands of many has not been wanting and has fulfilled all of the claims of Hagedorn. While many believe it will never replace insulin entirely, it will, however, reduce the number of hypodermic administrations daily and in some cases, perhaps, will limit the dose to a single one in each 24 hours. It goes without saying that the successful use of either of these therapeutic agents requires time before marked improvement can be anticipated. Anxious parents often ask, and rightly so, “Do you believe my child will reach the point where the administration of insulin or protamine insulin will not be necessary?” In response to this inquiry, White (1936) says that 14 patients in a series of 1,063 juvenile diabetics have apparently appeared to have spontaneously arrested diabetes.

Finally, the confidence of the patient must be gained and, in turn, the child must have respect and reverence for the doctor. Explanations and encouragement must be given to the child; his veracity must not be questioned even though you are conscious of

the fact that he has "cheated" in so far as sugar is concerned. They are all necessarily high strung and by some are considered proverbially precocious. In the end, the child who is old enough to realize his precarious condition will not deviate from the prescribed diet or routine that is given him. Realize finally that diabetes is a personal disease; the physician's relation with the child must be of an intimate nature.

PROGNOSIS

The prognosis of childhood diabetes is always serious but now not necessarily fatal. Antedating the Banting era, the life expectancy of the 10 year old diabetic child seldom exceeded two years. Already it is now between 31 and 32 years; later on, perhaps, it will be much more prolonged.

White (1932) gives the following table:

STATUS OF 750 DIABETIC CHILDREN IN 1931				
Period first seen	Total No. of cases	Number Living Oct. 1931	Per Cent Living	
Naunyn, 1898-1914	61	1	2	
Allen, 1914-1922	170	49	28	
Banting, 1922-1931	519	483	93	

SUMMARY

1. The history of diabetes mellitus has been outlined, with especial reference to infants and children.

2. The various eras and treatments therein have been mentioned.

3. Incidence and etiology have been briefly discussed.

4. Diabetic surveys of New Orleans have been reviewed and United States Government chart reporting deaths from diabetes mellitus by age in the registration states, 1916-1935, has been analyzed.

5. Treatment, including education, diet, exercise, insulin and protamine insulin, according to Joslin and others, has been recorded and evaluated.

CONCLUSIONS

1. Diabetes in infancy and early childhood is relatively more common than previously accepted.

2. The number of cases of diabetes mellitus in New Orleans reveals a decided increase, not only in number but also the

proportionate number of children exhibiting this disease.

Touro Infirmary July, 1933-December, 1936: Adult cases 388, children 12 years and under, 21; 5.4 per cent.

Charity Hospital July, 1924-June, 1936: Adult cases 2261, children 85; 3.7 per cent.

Charity Hospital July, 1924-June, 1936: Admittance 246,014—cases of diabetes 2346; or 9.5 per cent diabetes per 1000 admissions.

3. Eight additional cases of diabetes mellitus are reported; two at 18 months of age, being the youngest, and 13 years the oldest.

4. Prognosis in infancy and childhood is very favorable. Prior to the Banting era, the death rate was 98 per cent, between 1898 and 1914; 72 per cent between 1914 and 1922; and only 7 per cent between 1922 and 1931, as reported in the statutes of 750 diabetic children in 1931 by White. Life expectancy has been increased from two years to between 31 and 32 years.

5. Remember the personal relationship that must exist between patient and doctor in the treatment of this disease and limit the number who directly supervise the child.

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THE PATHOLOGY OF DIABETES MELLITUS†

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Ever since the observation by von Mering and Minkowski¹ that the urine of depancreatized dogs attracted insects on the laboratory floor and their discovery that the animals were glycosuric, the problem of diabetes has continued to be one for the laboratory, whether in research or in clinical control of the patient.

The discovery of the separate islands in the pancreas by Langerhans prepared the way for the speculation by Laguesse² that they were actually organs of internal secretion. With the observation by Opie³ that in certain cases of diabetes mellitus there was a specific type of hyaline degeneration in the islands, the foundation for the present pathologic conception was laid. This hyalinization of the islands of Langerhans is caused by the deposition of a substance related to or possibly identical with amyloid.

It is laid down between the endothelium of the capillaries and the epithelium of the islands so that it exerts a two-fold action, not only cutting off the island cells from their blood supply, but also directly compressing them and leading to their atrophy and ultimate disappearance. This hyalinization of the islands of Langerhans is not a static process. It represents a gradual accretion of material compensated for, to greater or less extent, by the enlargement of existing islands or the development of new islands from the duct epithelium.

Its presence is not restricted to cases of

diabetes. In mild degree it is found in patients dying from other causes, but who presumably would be diabetics were the process to continue unchecked. The effort of the insular epithelium to compensate for this injury through proliferation may lead to the production of islands of almost adenomatous size.

In general, hyalinization of the islands of Langerhans occurs in elderly individuals and the diabetes associated with it tends to be fairly mild and of long duration. In younger individuals a fibrosis of the islands may be found in which fibrous tissue is laid down without leukocytic action or evidence of necrosis in much the same site as is the hyaline. This change may range from a very slight fibroblastic proliferation to a complete replacement of numerous islands by scar tissue.

In children and young adults a lymphocytic infiltration of the islands is sometimes observed which is characterized by a sharp restriction to the insular zones and a very appreciable disappearance of the epithelial elements of the islands. In all these changes described there is no significant difference in the degree of involvement of the alpha and of the beta cells.

Allen⁴ emphasized some years ago a change first described by Weichselbaum,⁵ the hydropic degeneration of the insular epithelium. This hydropic degeneration is assumed to be due to an attempt of the functioning insular cells to produce a sufficient amount of insulin to meet the needs of the body and a consequent degeneration of the cellular elements. I have seen very few cases of true hydropic degeneration and in most of those in which it appears, it is simply a postmortem change.

In hemachromatosis practically experimental diabetes exists, in that in this disease due to a disturbance of iron metabolism there is first involvement of the liver and sooner or later involvement of the pancreas, including the island cells with resultant diabetes. This diabetes has been termed "bronze diabetes" since it involves pigmentation of the skin. Here there are known chemical substances, hemofuscin and hemosiderin, being deposited in varying degree in the cells of the islands of Langerhans, and the severity of the disease increases as the pigment is deposited and as the generative changes

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fail to keep up with the degenerative process.

Indeed, one of the interesting things about diabetes is that no matter what the lesions of the islands may be, the diabetic syndrome becomes established and one cannot predict with any degree of certainty, no matter how carefully the patient is studied, what will be found at postmortem in the islands.

The most interesting and encouraging factor in the entire study of diabetes is that at least one-fourth of the pancreases show no appreciable pathology, and it must be assumed that either a functional disease or a disarrangement of cellular activity exists which is so slight that no morphologic change can be detected. The fact remains that there is no pathologic barrier to the return of function in at least one-fourth of the cases of diabetes and most of these cases lie among children and young adults. Whether spontaneous cure or cure after long periods of insulin therapy will occur with any degree of frequency is uncertain, but already isolated cases of apparent cure of diabetes in childhood are known.

EXTRA-PANCREATIC PATHOLOGY

Leaving the pancreatic pathology in diabetes, a disturbed and controversial field is entered. The possible role of the pituitary has been emphasized by many. My own studies have convinced me that in the ordinary case of diabetes mellitus, pituitary pathology is not a factor. Long, with his experiments on the adrenal, has shown that this may play a role in experimental diabetes, but here again no consistent pathologic change is found in the human. Hepatogenic diabetes is as yet nebulous.

When the pathologic changes secondary to the diabetic process are considered there is a considerable body of information. First, the changes directly brought about by the disturbed carbohydrate metabolism must be studied. This is essentially a disturbance of the glycogen deposits so far as pathologic observation goes, because sugars are so highly diffusible that it is impossible to detect their presence in the tissues by histologic technic. With glycogen, however, the Best carmine technic gives a ready means of identification. Here the fundamental change is depletion of the normal deposits and laying down glycogen in abnormal loci. Prom-

inent among these points are the nuclei of liver cells and the renal tubular epithelium, particularly in Henle's loops. It is interesting in passing to note that the characteristic changes in glycogen deposition in diabetes were observed years before the relationship of the pancreas to the disease had been described.

The extraordinary susceptibility of the diabetic patient to infection has as yet been clothed in mystery. Various types of tests have as yet failed to show any reason for this point of major clinical importance. Studies of the leukocytes, of opsonic index, of complement, of antibody, and other factors have failed utterly to throw any light on this problem. Suffice it to say that when the diabetic patient is brought back to normal through diet and insulin, his resistance to infection is also brought back to normal levels.

Now that diabetic patients are living longer, now that coma is not a major cause of death, more and more emphasis is laid on the disturbed lipid metabolism in diabetes because of its undoubted role in causing the vascular injury that is of such overwhelming importance today. The lipemia of certain diabetics, the predilection of diabetics as a whole to develop gall stones, the occurrence in uncontrolled diabetics of xanthomata, all point to this disturbed metabolism, but the thing that brings gray hairs to the doctor and kills the patient is the deposition of lipid in the arterial walls. The untreated or poorly treated patient develops arteriosclerosis of the atheromatous type earlier in life and faster than does the normal individual. In fact in the pre-insulin days I never autopsied a diabetic patient with over five years' duration of the disease, regardless of age, who did not show arteriosclerosis.

The arteriosclerosis of a diabetic is not a special lesion although a characteristic one. It is in essence an extension of the atheromatous type of arteriosclerosis from the site in which it commonly occurs, the aorta and great vessels, to the muscular arteries of the extremities and to the coronaries. It may or may not be associated with medial calcification of Mönckeberg. The better control of the diabetic patient with more liberal carbohydrate in the diet permits a more normal metabolism, and less and less arteriosclerosis is observed.

It is perhaps not too much to expect that with full utilization of the means of control of the disease now at our disposal the diabetic patient may be rendered no more susceptible to arteriosclerosis than is the normal individual.

SUMMARY

The message given by the study of the pathology of the disease is essentially one of hope. First, the damaged pancreas makes some, though very abortive, efforts at regeneration. Second, no demonstrable pathology can be brought out in many cases and consequently irreparable damage has not been done to the tissues. Finally, with more adequate control of the disease, its complications can be materially reduced.

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SOME MINOR DISORDERS OF THE FEMALE URETHRA*

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That inflammatory disease of the female urethra, exclusive of that caused by the gonococcus, is frequent in occurrence has been established by both pathological and clinical observation. Unfortunately these conditions have not been generally recognized, and while it is not often of serious import many women continue to be distressed with symptoms which are usually ascribed to "acid urine", "cystalgia", "pressure on the bladder", or "neurosis".

Bugbee reports urethral lesions in 69 per cent of 1000 women suffering from frequency. Stevens states that 67 cases (15 per cent) in a series of 425 female patients with urinary disease showed involvement of the urethra alone.

*Read before the Orleans Parish Medical Society November 23, 1936.

Review of the last 500 cases seen in our office reveals a primary diagnosis of urethral conditions in 109 instances. These are divided as follows:

Gonorrheal urethritis.....	17
Non-specific urethritis.....	73
With inflammatory tags.....	15
Caruncle	2
Urethral diverticulum.....	2

McKenzie in a recent study of 30 adult urethras at autopsy found evidence of inflammation in 95 per cent, and 36 per cent of children under the age of four showed a definite round cell infiltration in the submucosa.

It is not surprising to find such a high incidence of infection when we bear in mind the proximity of the vagina and rectum. This is logically the most common source, though Hunner and others have called attention to foci of infection in distant parts of the body as a possible cause. The urethra harbors infection readily as numerous small glands are found throughout, but particularly in the middle and distal thirds. These glands are referred to as the homologue of the prostate by Johnson, Folsom, and others. Virchow mentioned this possibility. Embryologically, the female urethra is the homologue of the male prostatic urethra proximal to the utricle. When these glands are infected there is always the possibility of an ascending cystitis and pyelonephritis, which is by no means infrequent. Conversely, when there is pyuria of renal or vesical origin, the urethra and its glands are constantly exposed to this infection and a residual urethritis after the urine has become entirely negative in these cases is relatively common.

The bacteriology in cases of chronic inflammatory urethral disease is not characteristic. Smears usually show a number of different types of organisms, and most any of the ordinary pyogenic bacteria are capable of being the etiological factor.

CHRONIC URETHRITIS

The most common disease of the female urethra is a chronic non-specific urethritis. This may cause no symptoms on one extreme, and on the other, may be the source of a great deal of distress. Ordinarily, the patient complains of frequency, burning, urgency, pain on void-

ing, or pain in the region of the urethra or bladder, and occasionally hematuria, which as a rule is terminal. She may present herself with either one or a combination of these troublesome symptoms. Often her social habits have been so limited that she has developed some mental disturbances. Folsom and Alexander have seen patients relieved of pain in the lower abdomen, back, and femoral regions by treatment of the urethra.

Examination usually reveals a urine entirely negative unless there is coexistent cystitis or pyelonephritis. Inspection of the external meatus may show some redness and a slight discharge may be present. If the opening is contracted down it is likely to be a pale pink in color. This we speak of as a "cicatrical" urethritis in distinction from the "granular" type. However, a combination of the two types may be seen in one individual. The "cicatrical" process is characterized by an excess of fibrous tissue, and this may result in the production of a large caliber stricture which makes itself known by difficulty in voiding. The normal size of the urethra varies between 26-F and 34-F.

Having found a negative urine and a normal bladder capacity (to exclude interstitial cystitis) the condition is treated by the use of sounds. Starting with one which fits the canal snugly, the patient's urethra is dilated two or three times each week, gradually increasing the size of the instrument used. After dilating, an instillation of one or two per cent silver nitrate or one of the colloidal silver salts is beneficial. It is desirable to avoid any undue pain which is entirely unnecessary. This treatment will relieve a majority of the cases, but if it is carried out on four or five occasions without improvement, cystoscopy and urethroscopy are indicated. The urethra is carefully scrutinized for any infected glands, the openings of which are red and may be somewhat dilated, and pus may exude from them. Skene's glands should be stripped with the finger. Topical application of ten per cent silver nitrate to any infected glands or granular areas is often of benefit. Better still is the cauterization of these spots with the pure nitrate fused on a stiff wire and applied through an open endoscope. Treatment of skenitis

with the high frequency current is a recognized procedure.

URETHRAL TAGS OR POLYPS

In a fair number of cases (16 per cent in this series) proliferative lesions will be found with the urethroscope. These are commonly termed tags or polyps, and are evidently of inflammatory origin and perfectly benign. They may be pedunculated, fimbriated, or sessile. Their most common site is on the sphincteric margin where they may be visualized in any portion of the circumference. However, they



Fig. 1. Urethral tags or polyps.



Fig. 2. Urethral tags or polyps.



Fig. 3. Electrocoagulation of urethral tag (polyd).

are also found distal to the sphincter, and if sessile they may be difficult to find. These proliferations are usually the cause of persistent trouble, though I have seen them completely asymptomatic. Treatment is by cauterization or electrocoagulation, using a Bugbee electrode, the latter being the method of choice. Anesthesia is usually best for this procedure, and a sacral block is entirely satisfactory. After electrocoagulation it is advisable to lavage the bladder two or three times weekly, as infection frequently occurs as a result of devitalization of tissue. One treatment of this nature as a rule is sufficient, but if relief is not obtained, careful and repeated urethroscopy is carried out. It may be quite difficult to find "the spot" responsible for symptoms, but perseverance is generally rewarded.

Small cysts which are said to have their origin from the cell nests of von Brunn are found occasionally in the urethra and termed urethritis cystica. These are rarely the cause of symptoms, and it is generally accepted that they are merely evidence of a chronic infection. Similar cysts are found in the bladder, ureters, and kidney pelves.

DIVERTICULUM

One can hardly pass over this uncommon condition when speaking of urethritis, as concomitant urethral symptoms may easily mask

a diverticulum. No one has definitely determined their mode of origin, but they are seen after injury of the urethra and periurethral abscesses. Conjecturally, a gland may have its duct occluded, form a cyst, and rupture into

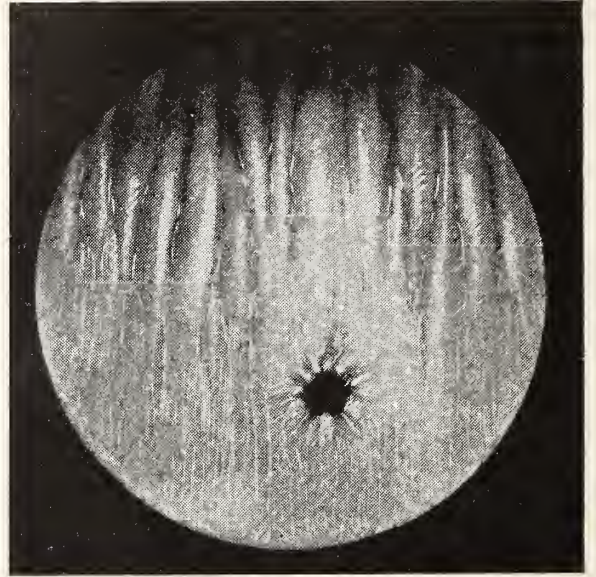


Fig. 4. Ostium of urethral diverticulum.

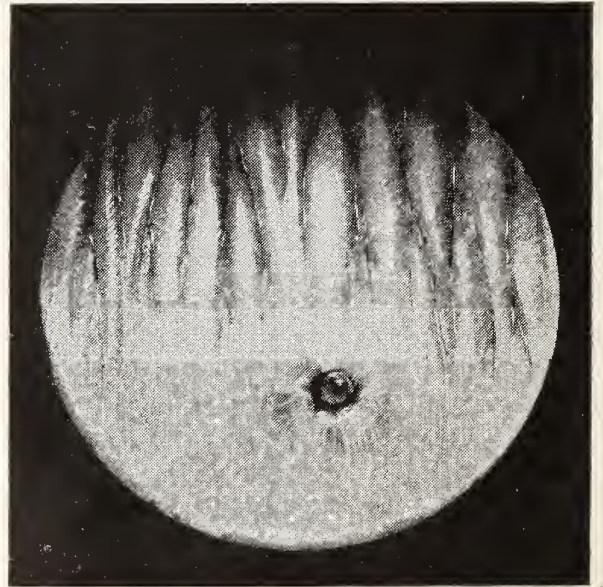


Fig. 5. Ostium of urethral diverticulum exuding pus.

the urethra thus forming a pocket. It is also reasonable to assume that chronic inflammation in a gland may cause a gradual dilation. Some are apparently congenital. Stricture or any other obstruction distal to the sac will aid and abet in its gradual enlargement. These diverticula may be small and shallow, or may extend

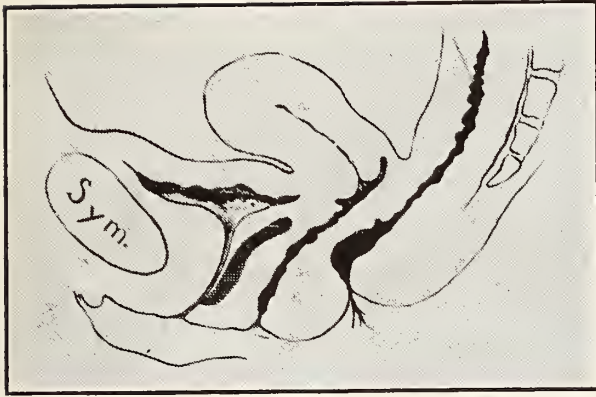


Fig. 6. Diagrammatic sketch of urethral diverticulum.



Fig. 7. Diagrammatic sketch of urethrocele.

up under the trigone attaining a two or three ounce capacity. Stagnation of urine in the pocket leads to infection, and the symptoms of urethritis are almost always present. In addition, the patient may notice some difficulty in voiding and a dribbling of urine for several minutes afterward. Inspection often reveals a bulging in the anterior vaginal wall which when pressed upon ejects purulent material through the meatus. If a catheter happens to enter the neck of the diverticulum, pus is evacuated; whereas on other occasions the bladder is entered and urine is obtained. Examination of the urethra will disclose the opening of the diverticulum. Care must be taken to differentiate this condition from urethrocele, which is a large sacculation of the entire urethra distal to the internal sphincter and which causes essentially the same symptoms. Treatment for diverticulum is excision of the sac. This is tedious and sometimes difficult, with stricture,

incontinence, and fistula being postoperative results in some cases. Occasionally a calculus is found in diverticula, and it usually cannot be removed until the sac is opened.

CARUNCLE

Caruncle is a benign pedunculated growth occurring at the external meatus and of inflammatory origin. They are found to be separable into three distinct lobes and almost always spring from the posterior lip of the meatus. Histologically, they are made up of loose connective tissue covered by the urethral mucous membrane, and they are highly vascular. Symptomatically, in addition to the symptoms of chronic urethritis, we find complaints of



Fig. 8. Caruncle

“spotting” on underclothes, frank bleeding, pain on contact with clothing, and severe burning externally on voiding. Some have no complaints. On inspection a strawberry-like growth is found which may show any of the various shades of red in color. It is important to separate the lobes as this helps in distinguishing it from a prolapsed mucosa which is a red, edematous, and tender protrusion of the posterior lip of the urethral orifice, and is found much more frequently than caruncle. Crenshaw’s method of treatment of caruncle consists of excision of the lobes after the pedicle is clamped, followed by chemical cauterization of the base, and seems the method of choice, as

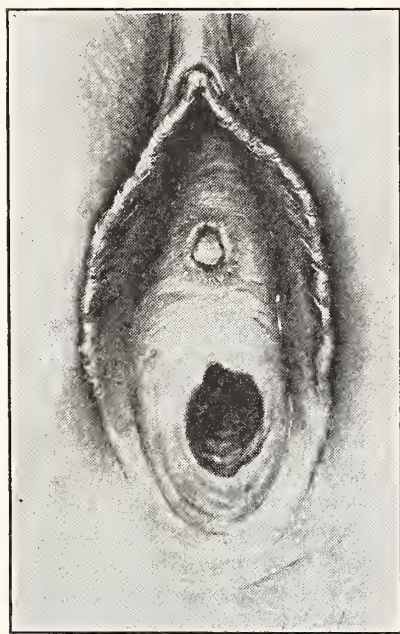


Fig. 9. Prolapsed urethral mucosa.

it precludes troublesome hemorrhage, does not cause scar tissue to any extent, and allows a biopsy to be done. This latter is of importance as an extremely rare case of epithelioma at the meatus is encountered. Caruncle is prone to recur, and after removal, the cervix and vagina should be carefully inspected and any source of infection corrected.

CONCLUSIONS

1. Chronic inflammatory disease of the female urethra is extremely common.

2. A wider recognition of this possibility by the profession will bring relief to many women with distressing symptoms.

3. Urethritis should always be considered as a focus of infection which may ascend, and also often remains as a focus after pyelonephritis or cystitis is cured.

4. While most cases of urethritis respond readily to treatment, it occasionally requires persistence and patience to give relief.

5. Foci of infection should be eradicated, particularly vaginal and cervical foci.

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DISCUSSION

Dr. Hilliard E. Miller (New Orleans): It is difficult to dissociate lesions of the urethra and bladder from gynecologic problems, for in making a gynecologic survey an important part of the investigation consists of inspection of the urethra, the meatus, and palpation of the full length of the urethral canal. Chronic urethritis of non-specific origin, as Dr. Vickery has just said, is a frequent problem with us.

I believe that all too frequently injuries to the

anterior vaginal wall are overlooked as a causative factor in urinary symptoms. I have seen many patients who were unrelieved after innumerable bladder irrigations, cystoscopic investigations, and dilatations of the urethra, and I have found after asking the patient to strain that the entire anterior vaginal wall was relaxed. When injuries cause this anatomic defect, the urethra instead of lying parallel to the vaginal canal, assumes a perpendicular position. These patients complain of incontinence; when they laugh or cough, they spill urine because of the incompetent sphincter resulting from distortion of normal anatomy.

The correction of cystocele and rectocele, as far as the gynecologist is concerned, is of the utmost importance in abolishing a common factor in the causation of incontinence of urine in women. The approach to the correction of cystocele and rectocele must be along the same lines as in the correction of hernias, because actually the anatomic defect is similar to that of a true hernia.

One of the most frequent causes of chronic and recurrent urethritis is gonorrheal infection of Skene's glands. It is easy enough to overlook infection in these structures unless cognizant of the fact that they are commonly involved in such infections. A thorough inspection of the urethral meatus will frequently show the openings of Skene's glands to be edematous and reddened, and if pressure is exerted on the glands a drop of pus exudes. In 99 per cent of instances, the causative organism is the gonococcus. In a certain per cent of these cases, destruction of Skene's glands can be accomplished by the introduction of pure carbolic on a small probe, afterwards neutralizing with alcohol. However, the most certain method of abolishing the infection is to probe the gland and destroy it with the actual cautery.

Above Skene's glands are several small mucus glands of the urethra which do not penetrate the full thickness and which may be the source of a chronic infection. These structures may be visualized through the endoscope and because of their shallow nature, infection can be cleared up by repeated silver nitrate applications. Infection of these glands gives rise to a granular appearance of the urethra.

Too often, the cervix as a primary cause of a chronic urethritis and cystitis is overlooked. The lymphatics at the base of the bladder connect directly with those of the cervix, and it is easy to understand that a chronic, persistent inflammation of the cervix may produce a chronic lymphangitis, which, while it is extravascular, may create sufficient irritation to give rise to bladder symptoms. These cases are not relieved by bladder treatments of any kind, and one can only hope for a disappearance of the symptoms after the cervical infection has been completely eradicated

by the cautery, or by whatever surgery may be indicated for the correction of such a chronic inflammatory lesion.

It has been very definitely demonstrated that *Trichomonas vaginalis* will produce bladder symptoms because of the extravescicular involvement of the lymphatics under the base of the bladder, and that treatment of the *Trichomonas vaginalis* and the cessation of symptoms caused by this infestation will bring about amelioration of all bladder symptoms. Here again is a demonstration of the close association of the lymphatics of the vagina and those of the bladder. In such conditions the extravescicular involvement will show edema, reddening of the trigone of the bladder, yet the bladder urine is free of organisms, demonstrating clearly that the bladder irritability is occasioned by a condition which is outside the bladder mucosa itself.

Urethral strictures are uncommon problems in the female urethra. However, we see considerable diminution in the caliber of the female urethra in elderly women in the presence of definite senile changes. The urethra shares in the contractures which occur in the vaginal mucous membrane, and frequently, the caliber of the urethra may be reduced to one half normal size. The problem is difficult because it is very hard to dilate the urethra to anywhere near the normal size. Some cases are improved by the use of large doses of theelin combined with regular dilatations. The theelin renders the structures more elastic, reduces the dryness of the vaginal mucous membrane, and makes it possible to stretch the urethral canal to a dimension approaching normal size.

Suburethral abscesses are comparatively rare in the female. They usually result from extension of a chronic specific infection of Skene's glands, an infection spreading between the supportive structure of the urethra and the mucous membrane of the anterior vaginal wall. As a rule, they are localized and may reach a size of from 1 to 4 cm. in diameter. Should such an abscess form, extreme care must be exercised to determine whether it connects directly with the urethral canal, for should that be the case, a urethral fistula might be established by incising the abscess on the vaginal surface of the tumefaction.

Chronic non-specific urethritis is one of the most persistent and discouraging problems related to the bladder and urethra. There is an extensive definite induration throughout the entire length of the urethra. The mucous membrane is reddened and edematous, with irregular areas of granulation extending from the bladder sphincter to the external meatus, evidencing an old chronic problem where chronic inflammatory elements have been deposited in all layers of the urethral structures. In such instances, Skene's glands are

commonly the site of the original infection. As a primary approach to the problem, destruction of these glands is essential. I have obtained the best results by the use of the Elliott machine with the urethral applicator, delivering heat to the involved structures of from 118° to 128° over a period of one hour. This is continued until the patient has had from fourteen to twenty treatments.

May I state in conclusion that the gynecologist must be constantly aware of the fact that co-existent with gynecologic lesions are many urethral and bladder problems, and that he must be on the alert to recognize these conditions, or fail to relieve the patient of the symptoms for which he has been consulted.

Dr. W. A. Reed (New Orleans): I have been particularly interested in diseases of the female urethra for many years, especially so, because of the teachings of my preceptor, Dr. Abraham Nelken, who considered the urethra a very important focus of infection in infectious diseases of the upper urinary tract. In recent years a great deal of study of the female urethra, as a focus of infection *per se*, has been done. Among the recent work is that of Mr. White of London, who was a guest speaker at the meeting of the American Urological Association in Boston, last May. His studies were made along the same lines as that of Folsom and Van Duzen of Dallas, and others. He showed that following the injection of carbon black under the trigone of the bladder, serial sections of the ureters and kidneys demonstrated the presence of the carbon black in both these structures, showing that there is, beyond a doubt, a direct lymphatic communication between the base of the bladder and posterior urethra, and the kidney itself. These facts, of course, cause one to realize that in treating infections of the upper urinary tract close attention must be paid to the condition of the urethra. Many times in the past I have observed a marked improvement in patients suffering with upper urinary tract infections following a simple inspection of the bladder by means of the cystoscope. This improvement was without doubt due to the improvement in the condition of the urethra, which resulted from the passage of the cystoscope. This fact is so true that no case of pyelonephritis or pyonephrosis receives appropriate treatment without ample dilatation of the urethra combined with direct treatment of the urethral glands or urethral polyps, if present, endoscopically or cystoscopically.

Dr. Miller brought out in his discussion the fact that frequent urination is a common complaint in aged females. Inspection of the urethra in these cases very often shows no evidence whatever of inflammation. It will be found, however, that in a large percentage of cases there is exist-

ing an atrophic constriction of the urethra which responds promptly to dilatation, with complete relief of the urinary frequency. It is also true that treatment of cervical infections, a point which was stressed by Dr. Miller, is necessary.

Dr. E. von Haam (New Orleans): I am very glad indeed that Dr. Vickery called attention to the fact that other diseases may infect the urethra besides gonorrheal infections. I would suggest to replace the term "non-specific infections" with "undetermined infections" as long as the causative organism is unknown. Many cases of so-called non-specific urethritis are now recognized as manifestations of lymphogranuloma inguinale and I had an opportunity recently to see two of those cases in Baltimore and in New Orleans. I believe that the Frei test should be made in all cases of urethritis of undetermined etiology.

Dr. Vickery (In conclusion): In answer to Dr. von Haam's question, I must say that I have not been fortunate enough to see any case of lymphogranuloma inguinale in the female urethra.

I want to thank Dr. Miller for bringing out the gynecologic side. I feel as he does that the position of the urethra in cases of cystocele certainly has something to do with the etiology of chronic urethritis. I also feel that a good many cases when they have the cystocele corrected will need some further treatment of the urethra after the cystocele is put back in place. I am sure Dr. Miller will agree with me.

TREATMENT OF BRONCHIAL ASTHMA*

REPORT OF 244 FOLLOW-UP CASES

W. H. BROWNING, M. D.
SHREVEPORT

The cure of bronchial asthma is not as yet one of the accomplishments of medical science. Hygeia magazine¹ has exposed, in the following list, many remedies claiming to cure this disease which are purely nostrums:

Ascatco, asthma-non, asthma-sera, asthma-tabs, az-ma-syde, Carlin's asthma remedy, Florence formula, Force's asthma manna, free breath, Fugate's asthma remedy, Gardner's remedy, Hair's asthma cure, Hayes' asthma cure No. 781 and No. 808, Hart's Swedish asthma medicine, Himrod's asthma powder, Lane's asthma cure, himalaya, Kellogg's asthma remedy, Lea-

ven's asthma prescription, Munyon's asthma cure, plantoxine, Power's asthma relief, razmah, rinex, Schiffman's asthmador, Stello's asthma cure, Sterline's asthma and hay fever remedy, Taft's asthmalene, Tucker's asthma specific, Webb's famous prescription. The majority of these remedies are composed of compounds of iodides and arsenic. Although there is no cure for asthma, the control of its symptoms is easily within the power of any physician.

TREATMENT OF ACUTE ATTACK OF BRONCHIAL ASTHMA

In relieving an acute attack of bronchial asthma, a physician has a choice of the following biologicals and drugs: 1. Adrenalin hydrochloride (1:1000 solution) by hyperdermic. The dosage should not exceed 0.3 c.c. This dosage may be repeated at hourly intervals if necessary. The large doses of 0.5 c.c. to 1 c.c. are dangerous and may, occasionally, account for a death.

2. Adrenalin hydrochloride (1:1000 solution) and ephedrine sulphate (3 per cent solution), mixed in equal portions, dosage not to exceed 0.3 c.c., is often very satisfactory because of the immediate relief produced by the adrenalin hydrochloride and the prolonged effect produced by the ephedrine sulphate.

3. Adrenalin hydrochloride (1:100 solution), used as a laryngeal spray with a non-metallic atomizer is often effective if used early in the attack and has the advantage of not requiring the services of a physician.

4. Opiates are often necessary but are dangerous for asthmatics because of their habit forming qualities.

5. Ephedrine sulphate, orally or by hypodermic, will usually give relief but the action is very slow.

6. Nitrates usually give quick relief when used as an inhalant but often cause distressing symptoms and sometimes contribute to an asthmatic death.

7. Neosynephrin hydrochloride, used by hypodermic or as a nasal and laryngeal spray, may give relief but the action is slow.

8. Atropine sulphate sometimes is very ef-

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

fective but not at all satisfactory in most cases, because it does not relieve the prolonged expiratory phase which is prevalent in all true cases of bronchial asthma.

Having administered the drug of choice, which is usually adrenalin hydrochloride, the physician now prepares a room for the patient, whether it be at home or in hospital. He must always supervise the preparation himself. The room should be freed of all rugs, carpets, draperies, feathers, clothing out of the closets, woolen blankets and other articles not essential to the well-being of the patient. The room should be very bare with just a bed, table, and the necessary bed clothing which should be made from cotton. If allergen-proof encasings are not available, one should cover the mattress with several plain sheets. If kapok pillows are not available, one should use cotton blankets or cotton quilts instead of pillows or he may use allergen-proof encasings if they are available. All dust should be removed from the room be-

fore the bed is prepared. The only other furniture in the room should be a non-upholstered chair for the attendant. Air conditioning² is desirable if it is available and, if not available, one should close all windows with the exception of one which should be opened not more than 12 inches from the bottom. Wet towels should be kept over this opening.

The patient is then moved to this room, with every possible effort to avoid contact with individuals using cosmetics. Visitors, excepting immediate members of the family, are forbidden access to the room and all members of the family are instructed to wear cotton or rayon clothing and not to use cosmetics of any type when entering the room.

The possibility of ingested allergens must be considered and it is usually advisable to give a large dose of magnesium sulphate. Then, to avoid further intake of foods that are likely to produce an asthmatic attack, one should adopt one of Rowe's elimination diets³.

RESULTS OF TREATMENT IN 244 FOLLOW-UP CASES
TABLE I
IMPROVEMENT ACCORDING TO AGE OF ONSET, SHOWN IN PER CENT

Age of Onset	No.	95%—100 %		75% — 95%		50%—75%		25% — 50%		0 — 25%		Dead	
		M	F	M	F	M	F	M	F	M	F	M	F
0- 4	88	16	20	31	15	5	1						1
5- 9	27	8	4	8	5	2						1	
10-14	11	1	3	3	2		1		1				1
15-19	9	2	3		3		1						
20-24	30	4	5	9	9	2	1						
25-29	18	1	4	4	5	2			2				1
30-34	18	1	3	3	6	1	4						
35-39	14		5		6			1	1	1		1	
40-44	11	1	3	2	2		3						
45-49	3	1			1					1			
50-54	6	1	2		1	2							1
55-59	4				2		1			1		1	
60-64	4		1	1		1					1		
65-69	1			1									
70 & Over	0												
Totals	244	36	53	62	57	15	12	1	4	3	1	3	4

TABLE II
IMPROVEMENT ACCORDING TO DURATION AT TIME OF EXAMINATION, SHOWN IN PER CENT

Duration at time of Exam		95%—100%		75% — 95%		50%—75%		25% — 50%		0 — 25%		Dead	
No.		M	F	M	F	M	F	M	F	M	F	M	F
Under 1 yr.	32	6	6	6	10	1	2			1			
2 yrs	23	6	6	4	5		1		1			1	
3 yrs	17	2	3	3	5	2	1			1		2	1
4 yrs	14	1	2	4	2	1	1	1	1	1			
5 yrs	18	5	3	4	3	3							
6 yrs	15	4	4	4	1	1	1						1
7 yrs	20	2	6	5	6				1				1
8 yrs	10	1	1	3	4	1							
9 yrs	14	2	3	3	5	1							
10 yrs	18		4	5	7	2							
11 yrs	5	1		3	1								
12 yrs	3	1		1			1						1
13 yrs	3		1		2								
14 yrs	0												
15 yrs	4	1	1	2									
16 yrs	3		2	1									
17 yrs	6	1			3	1	1						
18 yrs	2			1	1								
19 yrs	3			1	1		1						
20 yrs	14	2	2	3	4	2	1						
21 yrs	3		1	1			1						
22 yrs	1			1									
23 yrs	1								1				
24 yrs	1		1										
25 yrs & up	14	1	2	7	2	1	1						
Totals	244	36	48	62	62	16	12	1	4	3		3	4

The above mentioned procedures will relieve over 98 per cent of acute attacks of asthma within a relatively short time. There is an occasional case, probably due to ingested foods, that is not relieved promptly.

DIAGNOSTIC MEASURES FOLLOWING THE ACUTE ATTACK

1. A very careful history should be taken, not only considering allergy but other physical abnormalities such as hypothyroidism, sinus in-

fection, gallbladder disease, chronic appendicitis, pelvic disturbances, rectal disturbances, and other conditions that might disturb the well-being of the patient.

2. The physical examination should be thorough and complete.

3. Skin-testing should be done by the scratch and intracutaneous methods and, if necessary, by the passive transfer method. These methods

will usually reveal the source of trouble if an adequate number of tests are used and reliable extracts are employed.

4. Elimination diets³, based on the principles elucidated by Rowe, may have to be employed.

5. A leukopenic index⁴ determination is occasionally necessary to find the offending substance.

6. One should always do essential laboratory examinations consisting of red cell count, white cell count, hemoglobin determination, differential count, blood calcium, blood phosphorous, Wassermann, urine examination, and, in special cases basal-metabolic rate, stool examination and often it is necessary to do various types of blood chemistry and special studies of the red blood cells.

I have presented the results of treatment of 244 asthmatic patients who have been followed over a period varying from one year to four years. I have purposely omitted extrinsic and intrinsic factors, because I have as yet to see a case of asthma caused primarily by extrinsic factors. I have seen one case of hay fever that was perhaps caused by extrinsic factors alone.

One will notice, from Table I, that the onset of asthma is usually early in life and that the prognosis is better if the onset is early, which agrees with Unger's⁵ findings. In Table II, it will be noticed that the duration of the disease is also a deciding factor in the prognosis of the case. However, there is one other factor that has not been mentioned in this discussion and which is more important than the duration of the disease and that is, infection and polyposis of the nasal mucous membranes and nasal sinuses.

SUMMARY AND CONCLUSIONS

1. A brief discussion of the treatment of an acute attack of bronchial asthma has been presented.

2. A brief discussion of the diagnosis of the cause of bronchial asthma has been presented.

3. A summary of 244 cases of bronchial asthma has been presented which reveals that the earlier the onset of asthma, the better the prognosis, and the sooner an examination is

conducted after the onset, the better the prognosis.

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DISCUSSION

Dr. S. J. Couvillon (Moreauville): Since boyhood, I have had perennial hay fever attacks, coming twice a year and sometimes oftener. Very little relief have I ever received from those attacks and they just had to wear off. The last but most violent attack was June 1, 1936. The case was for the first time complicated with bronchial asthma and angioneurotic edema, affecting my hands and feet. The attacks were worse at night. I could not breathe. I did not know exactly what I had until I called physicians in to see me. All organic troubles were eliminated and the case really was one of a genuine form of allergic disturbance. I was advised by my physicians that in taking a vacation to go to Oklahoma City and have my allergic state thoroughly studied. I stayed there three days and innumerable tests were made for foods, plants, trees, domestic articles, animals and the like. After a thorough analysis, I was found to be sensitive to house dust, orris root, Bermuda and blue grass from the viewpoint of pollens, while among foods, I reacted to iced tea, cucumbers, radishes, American cheese, navy beans, all sea and shell foods, bananas, pecans and nuts of all kinds. I was found to be sensitive, too, to feathers and the doctor supplied me with a storeck rubber pillow cover with a "zip". Likewise, I have been regularly furnished with products against the dust, orris root, and the grasses to be introduced weekly.

I was also restricted to a proper diet, eliminating all sensitive foods, which I am happy to say I am carrying out intelligently. I have not had an attack of hay fever or asthma since. I noted in your remarks that you mentioned neosynephrin. I wish to state that this is a drug "par excellence" by dropping in the nostrils every morning, followed by a warm breakfast. It has a marked effect in draining infected sinuses which are invariably infected in chronic hay fever patients. My mother was a chronic hay fever asthmatic,

so much so that she developed emphysema of the lungs when quite young and later died of pneumonia in her late sixties. Very little relief could be obtained for her in those days and much less a cure.

I am just mentioning my case which may be of some interest to you and to the profession. Since I am so well, I am very much encouraged, although in a way discouraged since you mentioned that asthmatics do not get well, that is, they are never cured. Positively, I have never felt as well in all my life. I believe that hay fever asthmatics can be held in check when all measures instituted are well placed, and what I wish to emphasize is that no attempts to treat hay fever asthmatics or bronchial asthma should be undertaken unless the patient's allergic state is tested by competent experts in that field of medicine. Pollens, foods and substances which affect a certain group of asthmatics, may not affect another group presenting identical symptoms and while palliative measures must be used to control acute attacks, yet to attain a relief of any permanency, one's allergy has to be known to determine the real causative factors.

Dr. O. A. Eaddy (Keithville): I would like to say a few words about this subject. The first thing I want to mention is a remedy for an overdose of adrenalin. Probably Dr. Browning will tell you, but if he does not I want to mention this: I think it is a bad idea to instruct patients to do so, but doctors sometimes vary from the rule and have their patients administer drugs to themselves, especially adrenalin. That is a very dangerous procedure, especially in older people and people with high blood pressure. However, in case you should give them an overdose, one of the best things you can do is to imagine you have given them a dose of snake poison and put a tourniquet tightly over the site of the injection. Put the injection not too close to the shoulder, but three or four inches above the elbow and on the back of the arm, where you can have room to put that tourniquet on, if needed.

Last summer, on account of urticaria, I had been taking adrenalin. The last injection I took nearly killed me although I had taken just three minims. I thought of Dr. Browning's suggestion of the band. I had one in my pocket, and I put that band on and I think it saved my life. Instead of giving adrenalin in the abdomen, or some place where the band cannot be placed around so well, put it in the arm where the absorption may be stopped in a minute.

I am reluctant to mention any proprietary drug; I do not think it should be called a patent medicine, but on the market is a preparation called felsol. The preparation is put up in powders

marked "felsol," and some are unmarked; one may buy or prescribe either. I have found felsol a safe drug to give where the patient has to administer it himself. If you prescribe it, be sure to write felsol powder because if you do not it may be dispensed as feosol tablets, a different preparation. I do not recall just what it is; it is not expensive,—costs about seventy-five cents for fifteen powders. I have used it in a number of cases, with good results.

Dr. Robert Bernhard (New Orleans): I should like to ask the doctor just what his experience, if he has had any, has been with lipiodol in the treatment of asthma.

I have used lipiodol in those cases of bronchial asthma when everything else within the domain of science had been tried; autogenous vaccination, clearing up of the upper respiratory tract, clearing up the gastrointestinal tract, and so on, with practically no progress whatsoever. In these cases I have used lipiodol, and the results have been absolutely amazing. I am not talking about cases of bronchial asthma where there are emphysematous changes, where the lung tissue has lost its elasticity, where the air sacks are broken down and where bronchiectasis is beginning to form, and so on. I am referring to true bronchial asthma.

This past winter I treated thirteen cases, ten cases of which were absolutely symptomatically cured. One lady, who has had asthma for seventeen years, told me just about five weeks ago that this has been the first winter in seventeen years she has been able to lie down and sleep the entire night without the administration of adrenalin or some of the other antispasmodics.

I have seen it in other cases, as I say, ten out of thirteen. In my opinion, an infinite amount of good can be done with the administration of lipiodol in bronchial asthma.

Dr. W. H. Browning (In closing): The prognosis for asthmatics is relatively good when properly handled, as indicated by the charts in this paper.

The foods mentioned are frequent causes of asthma. Bermuda grass is a frequent offender and, in Louisiana, may produce symptoms from early spring to late fall, because of its long pollinating season here. House dust is the most frequent cause of asthma in this vicinity.

Felsol will certainly give relief to an occasional case of asthma. So will the "asthma cures" mentioned in the paper, but such plans of treatment are usually unsatisfactory and should not be recommended routinely.

Lipiodol has been used in a rather large series of cases, as yet not published, and I am of the

opinion that it is of value only in the cases that have bronchiectasis.

Dr. Bernhard: Did you read Anderson's article, of the University of Pennsylvania, with 450 cases, and most appalling results?

Dr. Browning: I have read the article referred to, but I am quite sure that I will not be able to duplicate the results reported.

INFECTIONS OF THE MIDDLE EAR*

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SHREVEPORT, LA.

When one remembers the economic loss and the embarrassment to the patient following an infection of the middle ear, one can then appreciate the importance of conserving the hearing and health of every patient suffering with a middle ear infection.

This disease affects the infant and the aged alike. True, infants and children are more predisposed to these infections. Nevertheless, they are no respecter of age or of person.

There are the acute and the chronic types of middle ear infections. One should bear in mind that the acute may merge into the chronic type in a short time. The exciting causes of the acute types are influenza, tonsillitis, scarlet fever, measles, hypertrophied pharyngeal tonsils, pus in the nose from infected sinuses, bathing in public baths, in fact, any febrile infection may be the cause.

Investigation has shown that the infection may enter the tympanic cavity through the lymph channels and the blood vessels. In the vast majority of cases infection is the result of a common cold.

It is true that otitis media is more frequently found in undernourished children and where the hygienic surroundings are not of the best, and unfortunately one attack predisposes to another attack.

It is probably true, as Turner points out, that gastro-enteritis and its consequent malnutritions are primarily a favorable infection of the middle ear. On the other hand there is also a close connection between acute pulmon-

ary conditions, especially bronchopneumonia and otitis media. Autopsies have shown 90 per cent infections of the middle ear in these cases.

Some authorities hold that a mild otitis media is almost universal in infants, owing to the fact that the embryonic tissue may readily become infected because it may persist in the middle ear cavity after birth, but as a rule this tissue disappears within the first few weeks of life. During the first two years aural suppuration is more frequent than at any subsequent age, and even at five years of age it is found in 2 per cent of all children. Otitis media is the most frequently overlooked infection of infancy and childhood, for the child may not even complain of earache.

ANATOMY

A study of middle ear infections with all of its complications is facilitated by a knowledge of the anatomy of the temporal bone, which is best found in the infant's skull. At this time it differs in many respects from that of the adult. At birth, and for many months thereafter, it consists of three distinct parts, which can be readily separated from each other. These are the squamozygomatic, the tympanic and the petro-mastoid. At this period in life these principal parts are held together by a connective tissue which ossifies slowly, so that as a rule, the connection between them is very imperfect at the end of the first year.

The most important parts of the auditory organ are located in the petrous bone. An external inspection of its surface reveals many characteristics, which are of the greatest importance to the otolaryngologist. The temporal bone is traversed by many large and small canals, and these are situated chiefly in the petrous and mastoid portion. The lining of the tympanic cavity and mastoid cells is really a continuation of the mucous membrane of the eustachian tube, but it is more delicate. In the vast majority of cases of purulent otitis media, the infection finds entrance through the eustachian tube. Fortunately the small caliber of the tube and the opposing ciliated epithelium movement tends to prevent the entrance of bacteria.

*Scheduled to have been read before the Louisiana State Medical Society, Monroe, April 28, 1937.

SYMPTOMS

The onset may be sudden, or it may be a slow process. One should bear in mind that as a rule there is no sharp demarcation between a middle ear infection and a mastoid infection. Consequently, this disease should be considered as one and treated as a single infection, and we should not dissociate the vomiting of children and a middle ear infection, for frequently they co-exist. Furthermore, the borderline between an attack of acute catarrhal otitis and an attack of acute suppurative otitis is very indefinite. The deciding factor depends on the type and virulence of the invading organism, also the resistance of the patient and the anatomic peculiarities of the patient as well.

Earache is the most common symptom in acute middle ear infections. There is usually tenderness over the mastoid antrum and tip. The pain is caused by air or liquid under pressure. Deafness may be present. If the patient is a child, he may be restless and roll the head from side to side, and as a rule will pull at the affected ear. There is loss of appetite and sleep. Temperature is variable, and is not a dependable sign. Convulsions and meningitis may be present from the onset. It seems unnecessary to add that it is a safe rule always to examine a child's ears, irrespective of the illness.

The appearance of the tympanic membrane is characteristic, but this changes in appearance with the progress of infection. Usually there is some enlargement of the blood vessels. These vessels lie around the periphery of the tympanum and extend inferiorly and posteriorly to the handle of the malleus. There is a lack of luster to the membrane and loss of light reflex. There is usually more or less bulging and redness. However, it is well to remember that at times there may be a grey instead of a red appearance of the membrane.

TREATMENT

A patient showing these symptoms should have a myringotomy as soon as possible. In the event a small perforation has occurred this should be enlarged. It is poor surgical technic to procrastinate in these cases. An early myringotomy performed under strict surgical surroundings is generally accepted as a safe

procedure. Surely a myringotomy is preferable to waiting until a perforation has taken place. Especially is this true, when it is remembered that invariably this means a long drawn out treatment, more scar tissue when healing finally takes place, and greater loss of hearing. An early myringotomy may mean the difference between a cured patient and one who may require a mastoidectomy later.

It is true that a myringotomy will not cure all patients, for further treatment is ordinarily necessary, and even a mastoidectomy may finally be indicated. It seems unnecessary to add that when possible these cases should be hospitalized from the onset of the infection. The reasons are obvious. A liquid diet, with an abundance of fruit juices, and sunshine are indicated. Carotene in oil and cod liver oil preparations are of great help.

A hematologic study and repeated roentgenograms of each case should be made, for this is the only method whereby a true picture may be obtained. Meningitis and serious thrombosis may be shown by so doing. As a matter of fact it should be routine practice to examine a smear of the aural discharge following a myringotomy, a mastoidectomy, and during the progress of the disease.

The micro-organism most frequently found is the streptococcus in one of its varieties. Next in frequency are the pneumococcus and the staphylococcus, and a less frequent organism is the pneumobacillus.

Tanaka and others find vaccine therapy very effective. The operator should take a swab of the pus following a myringotomy or from the cavity following a mastoidectomy. This vaccine should be prepared and used if there is delay in the cessation of the aural discharge or delay in healing of the wound.

Vaccines are more effective if autogenous, freshly prepared and started in small doses. Reaction must be watched and avoided by making the succeeding injections without any increase in amount. Doses should rarely exceed 0.5 c.c. and should be given weekly. They are of greater value when made from hemolytic cocci. My own experience in the use of autogenous or stock vaccines has not been encouraging.

You are perfectly familiar with the usual

treatment of an acute suppurative otitis media. However, I feel justified in urging that the dry method of treating be followed in all of the cases. Prontylin and prontosil, as well as insulin are being used in these cases, but it is too early to form an opinion or for me even to prognosticate, although I have had encouraging results with prontylin and prontosil.

An adenectomy and tonsillectomy should be done as soon as the acute symptoms have passed.

There can be no hard and fast rule to follow regarding the time when a mastoidectomy is indicated, especially when it is remembered that the temptaure is not a safe guide. A thorough conservative treatment is always indicated in an acute suppurative otitis media. If there is no improvement after a reasonable time, a mastoidectomy is indicated. This is true in children, especially when the onset has been sudden and when the symptoms are of a violent nature. This type is usually a *Streptococcus pyogenes* infection, and demands an early mastoidectomy. I am of the opinion that much valuable time is lost, the life of the patient is jeopardized and the after treatment is considerably prolonged by unnecessary delay in operating.

A preliminary transfusion is indicated, especially if the patient is a very sick child or in a weakened condition. Following a mastoidectomy, transfusions from different donors will materially shorten the duration of the disease and hasten the recovery of the patient. Arc-light and small fractional roentgen ray doses sometimes are found beneficial in cases which do not respond after an operation.

Any patient with chronic middle ear suppuration is potentially in danger of his life. This is true when we recall the intracranial complications which may occur, as meningitis, post-auricular swelling, purulent labyrinthitis, facial paralysis, petrositis and other complications.

The choice of anesthesia is of great importance. Infants and young children should be given a general anesthetic, whereas young adults and adults should have a local anesthetic.

It seems unnecessary to enumerate the ad-

vantages of practically no complications at the time of operation; a bloodless field, less shock following the operation and no fear of ether pneumonia, no nausea, less pain and the stay in the hospital is materially shortened. Furthermore, the patient is able to resume his occupation within one half the usual time required under a general anesthetic.

I was convinced long ago that the pain suffered by all patients who have had a mastoidectomy was out of proportion to the suffering of patients who have had abdominal and other operations. Investigation convinced me that this was due to the necessary tight bandage which is used., I devised the simple bandage

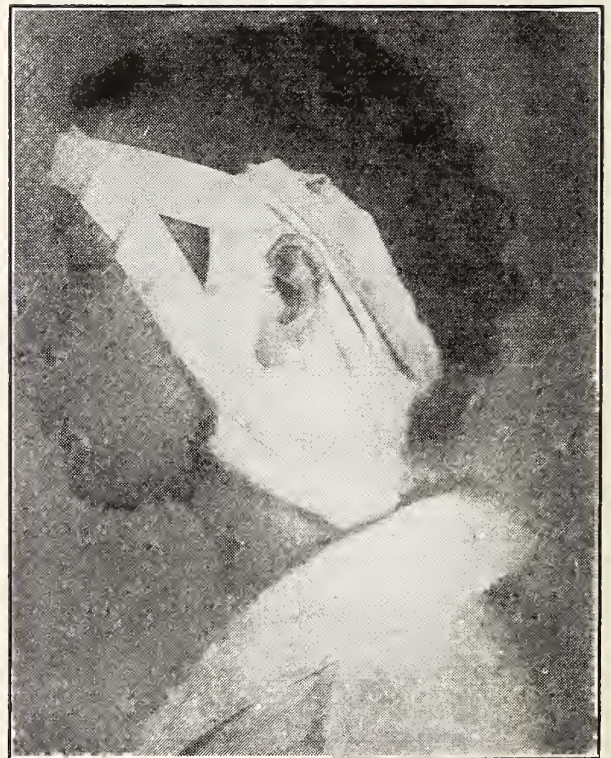


Figure 1. Dressings have been applied; held in place by a one inch adhesive.

which is illustrated. I recommend the use of this type of bandage with the assurance that the gratitude of patients will be sufficient justification.

Quite a while back chronic suppurative otitis media was treated with some form of an iodine and boracic acid powder, but for some unknown reason this fell into disuse. Within the last ten or more years the iodine and boracic powders are being used again with encouraging success.

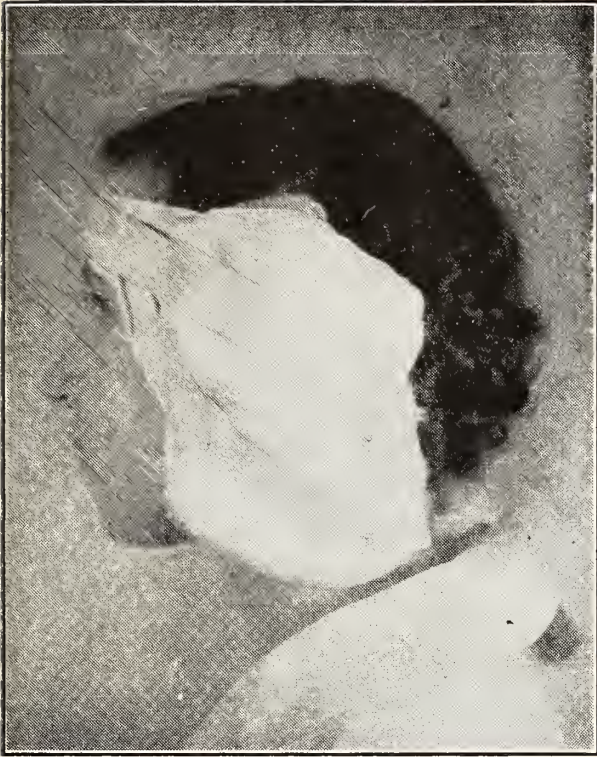


Figure 2. Three by five inch dressing covering is then applied; held in place by adhesive.

This method usually necessitates seeing the patient daily.

ZINC IONIZATION

I have had most satisfactory results in using the Miller zinc ionization machine in cases which do not respond to the usual accepted treatment in chronic suppurative otitis. However, it should be borne in mind that the Miller outfit can be used with just as encouraging results, in acute suppurative otitis media. The following cases will illustrate its use.

CASE REPORTS

Case 1. John, aged 7, was first seen on April 2, 1928. At three years of age, he had a severe attack of grippe and both ears have discharged since. The tonsils and adenoids were removed following the attack of grippe, with no improvement. The ears were thoroughly cleansed. One ear received a four milliamperes of the zinc ionization for ten minutes. Ten days thereafter the other was treated likewise. Each ear received three separate treatments. Recently word was received from the family advising that neither ear has discharged following the treatment. Naturally, there was no improvement of hearing.

Case 2. E. C., aged 7, was first seen April 8, 1928. An attack of smallpox at seventeen months

of age, left her with a painful and persistent discharge from both ears. Tonsils and adenoids were removed at the age of five years. No improvement. Each ear received two zinc ionization treatments at ten alternate day intervals. There was a cessation of the discharge from both ears. During July 1929 she developed an attack of measles, both ears again discharged and were treated once with the above method. Recent investigation shows that although there has been no improvement in her hearing, there has been no discharge from either ear for over nine years.

Case 3. Mrs. M., aged 45, was first seen in May, 1934. Both ears have discharged since babyhood, but no history could be obtained of the original cause. The tonsils were removed some years ago with no improvement. There never has been any sense of smell. Examination showed both drum membranes destroyed. This patient received eleven alternate treatments every ten days of zinc ionization. She has had no further discharge from either ear, and although I doubt it, she claims to be able to differentiate some odors.

SUMMARY

The management of infection of the middle ear is discussed from a point of view of symptoms, anatomy and treatment. Excellent results have been obtained with zinc ionization and three case reports are appended to show the value of this treatment.

DISCUSSION

Dr. George J. Taquino (New Orleans): I am indeed grateful for this opportunity to discuss the contribution of Dr. Crebbin, and to extend appreciation for the information he has just presented to us.

Infections of the middle ear may rightfully be considered by far the most important of all ear lesions, not only from the standpoint of occurrence, as they are the most common type of acute ear diseases, but also for the complications and sequelae which may result from the primary infection. The infection is acquired by way of the eustachian tube, whether from the nose, sinuses, or hypertrophied pharyngeal tonsils, which are the foci in a majority of cases. Where the tonsils and adenoids have been removed, 60 per cent of all middle ear infections are found to be due to sinus infection, and in some instances may be attributed to the fact that the adenoids have not been completely removed, and the small remaining portion may harbor infection. All middle ear infections are potential mastoids, but less than one per cent of my cases resolve as such.

Otitis media is frequently found in infants and small children and deserves much consideration

from our standpoint as well as by the pediatrician, who may aid immeasurably in an early diagnosis. The condition may be difficult to recognize, because frequently the infant presents a typical case of acute intestinal intoxication, with vomiting, diarrhea, and varying degrees of dehydration, but statistics show that in a great number of these cases, acute suppurative otitis media or mastoiditis is present. It is, therefore, a good plan routinely to examine the ear drums of all sick infants.

A hematologic study and roentgenograms of cases should be made as well as the routine examination of aural discharge. Another procedure which it is well to recommend is that at the time of the first roentgen ray of a patient for mastoids, a key plate should be made of the petrous pyramid, because, if after the operation another roentgen ray is made, the amount of involvement may be determined as compared with the previous condition.

Among the clinical symptoms there may be a thrombosis of the smaller veins, or a thrombosis of the vessels that perforate the haversian canals. The process then may become progressively serious, for they may pierce the dura, empty into the veins of the dura, which in turn empty into the superior longitudinal sinus, into the sigmoid lateral sinus, jugular bulb and vein, vena cava, pulmonary artery, pulmonary veins, and thence through the aorta into the distal circulation, where foci of infection may be deposited anywhere in the body. Therefore, in the presence of grave thrombosis, septicemia may eventuate, but it is possible to have septicemia without complete thrombosis of the lateral sinuses.

Dean, of St. Louis, at a recent round table discussion, in New Orleans, of hemolytic streptococcal infections, advocated the use of prontosil and prontosil, citing his experiences in which there was a clearing up of the septicemia without surgical intervention or ligation of the jugulars. These chemotherapeutic substances, the possibilities of which were envisioned through Ehrlich's conception of and untiring efforts toward conquering disease by chemotherapy, have been experimented upon extensively abroad and in the United States with encouraging results. Among the more recent reports are those of Foulis and Barr, in England, and Long and Bliss, in this country, in which the conclusion has been reached that we are justified in using this dye and its derivatives in streptococcal infections; consequently, it might be indicated in nasal, post-nasal, and throat involvements of hemolytic streptococcal origin, including septic sore throat, otitis media and mastoiditis. I have had success in the use of prontosil and prontosil.

With regard to other forms of treatment, it has been my experience that irrigation and washings

only prolong the cure, and I use the dry method. Repeated ionizations may be necessary, and in some instances of chronic otitis media and suppurative or purulent otitis media, ionization is of value. Transfusions when indicated are of benefit in patients who are very toxic, and of course especially in septicemias. Dr. Granger recommends small fractional doses of roentgen ray in the belief that they are sometimes helpful, and feels that in some instances they have aborted cases of mastoiditis.

The choice of anesthetic depends upon the preference of the operator. I use very few local anesthetics, although I have done them satisfactorily, but I believe there is less shock attached to the use of a general anesthetic. A gas anesthetic is my choice, ethylene and oxygen. In sixty odd cases of mastoiditis in the presence of pneumonia, an ethylene and oxygen anesthetic was used, and, with hardly an exception, the patients left the table in better shape than they were prior to the operation. There was not one fatality in this group.

Dr. P. L. Perot (Monroe): Dr. Crebbin has so thoroughly covered the subject of diseases of the middle ear, that I will only call your attention to the few anatomic facts in connection with infection of the middle ear.

I know of no other space in the human body where so many important structures so closely approximate each other as in the middle ear of the temporal bone.

The eustachian tube in early life is large, short, and more in a straight line. Very frequently pus can be seen draining into the nasopharynx from the eustachian tube.

The mucous membrane of the mastoid cells, middle ear and eustachian tube is direct continuation of the mucous membrane of the nasopharynx. Therefore, the middle ear naturally shares the inflammatory processes to which the nose and throat are subject. The middle ear may be classed as one of the accessory cavities of the nose, and conversely the nose and nasopharynx are a vestibule to the ear, and must be studied and treated if we are to do our duty in relieving ear infections.

It must be borne in mind the analogy of the tubotympanum and the upper respiratory tract. In these diseases the bacteria exhibit the inherent selective action in determining the type of tissue they are prone to attack, and find similar tissue in the lungs and middle ear.

Dr. A. L. Peters (Monroe): I want to commend Dr. Crebbin on this wonderful paper and the way in which he has presented it, and further stress the importance of reflex cough in diagnosis

of ear infections. We have only to remember how often a patient will cough when inserting a speculum or applying treatment to the external ear, to appreciate the importance of this symptom in diagnosing a middle ear infection. I have recently seen two cases of persistent cough clear up by directing treatment through the middle ear.

In reference to zinc ionization, the cases must be classified as to location of the infection, size and position of the opening in tympanic membrane. Please note that the essayist states that in his cases, the tympanic membrane was practically destroyed. It is this type of case and where the infection is in the middle ear that results are obtained from zinc ionization.

Should much be expected in the other type of cases, for example where the infection is high up in the attic and the perforation is in the antero-inferior portion of the drum head?

Following a catarrhal infection in the nose, attention should be directed to the nose and eustachian tube, and unless the foci of infection can be eliminated, not much will be gained by the treatment. Where the perforation is in Shrapnell's membrane and very small, it is impossible to reach the infected area by ordinary methods of treatment and it is in this type of case that one must resort to surgical procedure.

THE ROLE OF THE ORTHOPEDIC SURGEON IN THE TREATMENT OF ARTHRITIS*

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INTRODUCTION

As the title suggests, I believe there is still a role to be played in the treatment of chronic arthritis by medical men who devote special attention to the lesions and diseases affecting the bones and joints. I have used the word "still" because those of us who have been toiling for many years have faith in a promised time when the prodromes of at least the more crippling forms will be recognized by all general practitioners, taken seriously and treated intelligently. Then we may hope that irreparable joint damage will in truth be prevented. When this happy time comes, the orthopedic surgeon will have no role to play. The essentials of successful treatment will have become common knowledge and the whole will be recognized,

*Presented before the First New Orleans Graduate Medical Assembly, March 9, 1937.

as indeed it should be, as greater than any of its parts. The orthopedic surgeon should look upon such a loss of a part of his own soul as a reward and seek to make good this loss by intensive cultivation of other fallow fields of bone and joint pathology, the acreage of which is still large. Ideally, a specialist should be like Kipling's explorer who

"Plotted sites of future cities; traced the
easy grades between 'em,
Watched unharnessed rapids wasting fifty
thousand head an hour:
Counted leagues of water frontage through
the axe-ripe woods that screened 'em;
Saw a plant to feed a people, up and wait-
ing for the power."

Alas, the happy time we glimpse has not arrived and until it does we are convinced that from the moment when joint symptoms appear, up to the time when they disappear, the orthopedic surgeon has a role to play in the management of chronic arthritis.

THE INCIDENCE OF CHRONIC DISEASE

As far as I am aware, Massachusetts is the only state which has attempted to estimate with some degree of accuracy the incidence of chronic disease among its population. In 1929, Richard Conant†, the then Commissioner of Public Welfare in the State of Massachusetts, said that "in the long run the greatest single cause of poverty is chronic illness." This social aspect will be to many of you surprising, and to all of us sobering. In the "Report of the Special Commission to Study and Investigate Public Health Laws and Policies" in the State of Massachusetts which was published in December, 1936, under the Section of Adult Hygiene and Special Diseases appears the following sentence: "The conviction is today more general that purely environmental and preventive services must be expanded to include a study of those chronic diseases which have been found to be physically, economically and socially disabling to an alarmingly large

†"The Commonwealth," Vol. 16, No. 4, Oct.-Nov., Dec., 1929.

**Report of the Special Commission to Study and Investigate Public Health Laws and Policies. P. 174 Dec. 2, 1936. (State Department of Public Health, State House, Boston, Mass.)

proportion of the adult population in Massachusetts (about 30 per cent of those over forty years of age)". More than a quarter of the population of Massachusetts over forty years of age has some potentially or actually disabling chronic disease. The situation becomes more startling when it is considered that seventy years ago only 13.2 per cent of the population in Massachusetts was over fifty years of age and that in 1930, 20.4 per cent was over fifty. In 1870, there were seven productive adults to care for one non-productive; in 1930, there were only 5.4 productives to care for every non-productive.

I thought it important to digress for a moment from the diseases I am considering, reminding you once again that "the whole is greater than any of its parts," to the end that you may realize the enormity of the problem which chronic disease presents throughout our country and probably in every other country also as the age limit of life increases. Its solution should be earnestly sought on every humane ground. Moreover, chronic disease is biting into the purse of every tax-payer today and threatens to bite deeper tomorrow.

CHRONIC RHEUMATIC DISEASE

Returning to the subject of this address, it remains only to visualize for you how large a part of this problem of chronic disease is associated with chronic rheumatism. Turning again to the Report of the Massachusetts Special Commission, it is found that the diseases of the heart and circulatory system affect the largest number of people, and that the chronic rheumatic diseases are a close second. In Massachusetts there are over three times as many cases affected by chronic rheumatism as the sum total of those affected by tuberculosis, cancer and diabetes. When we consider that "Rheumatism cripples in the largest number and kills in the smallest," we are forced to conclude in the words of the Report that "this ability to cripple without killing, would seem to put it in the lead of all other chronic diseases as to pre-eminent social, economic and medical importance."

Similar conditions of incidence are believed to exist throughout the north and south temperate zones of the world, from South Africa

to Nova Scotia. It is seemingly almost absent in the tropics and in the polar regions. I sincerely hope it is less acute in warm and genial Louisiana than in chilly and reserved Massachusetts. Interest in the subject is growing rapidly. The Ligue Internationale Contre le Rhumatisme was organized in Europe several years ago and there are national committees of this league in practically all the Continental countries, in the British Isles and in the United States. The American Association for the Study and Control of the Rheumatic Diseases is "going strong" and seeking both professional and public support.

THE TWO GREAT CLASSES OF CHRONIC ARTHRITIS AND THEIR ETIOLOGICAL FACTORS

Atrophic, Rheumatoid, Proliferative Type.

The atrophic, rheumatoid or proliferative type is clearly a generalized disease, the most prominent symptoms of which appear in the joints. If the disease goes on unchecked, ankylosis of the affected joints is the end result. Despite the striking nature of the joint symptoms, the examination of the tissues and fluids within the joints of the atrophic type thus far has not revealed the exact nature of the underlying disease. One of the earliest signs is proliferation of the synovial membrane and hence Nichols and Richardson called it the proliferative type. The tissues comprising a joint mechanism react in a very similar manner to many different bacterial and chemical irritants and to subtle changes in the circulation. Occasionally cultures of joint tissues and fluids will show growths, but by no means always of the same type of organism, and yet the appearance of the joint and the joint symptoms, i. e., the joint reaction, may be almost the same. To put it in another way, different organisms may give similar reactions. Cultures from the joints of the atrophic, rheumatoid, proliferative type more often are successful than those from the joints of the hypertrophic, osteoarthritic, degenerative joints. Most careful investigators, however, obtain growths from atrophic joints very rarely indeed and practically never from the joints of the hypertrophic type. Seemingly, we must look elsewhere than in the joints for the most likely initial causes of both great classes of chronic arthritis.

It has been found that the atrophic, rheumatoid, proliferative type, which as we have seen may begin at an early or late age, but most commonly in the middle decades, has a higher incidence in women than in men. In both sexes it affects more often those of a slender asthenic body type than those of a stocky sthenic configuration. It may follow in the train of dysentery, pneumonia, Neisserian infection, rheumatic fever and after it has been well pronounced for many months or years its victims' sera almost always will agglutinate to high titer strains of hemolytic streptococci. The association with this group of cocci is clear, but the significance of this association is still indeterminate and awaits elucidation.

One must go much further back than the joints themselves in a search for background causes and unless this is done, treatment is likely to be followed by little benefit to the majority of patients. A remark of Haldane may be applicable: "We are unlikely to succeed along Pasteur's lines." Heredity, fatigue, nervous shock or depression, faulty body mechanics, circulatory disturbances, imperfect alimentation, food and vitamin deficiencies, endocrine dysfunction, foci of infection in other parts of the body—these are some of the remote etiologic factors which may prepare the ground for a harvest of arthritis. These statements are my own, but I think I may say that these same convictions are held in a general way by many earnest men whose labor in the fields of arthritis has been long and whose results have been rewarding.

Hypertrophic, Osteoarthritic, Degenerative Type. I believe that the hypertrophic, osteoarthritic, degenerative type is also a generalized disease or perhaps it might be said, a generalized tendency as well as a local joint derangement. The unchecked disease does not as a rule end in bony ankylosis as the atrophic type frequently does; the eburnated articular surfaces do not solidly unite, and fibrous adhesions bridging the joint space are not commonly found. In the spine opposing and impinging exostoses arising from the vertebral bodies' superior and inferior edges may eventually build bridges of bone spanning the intervertebral spaces, but in such a case it is the

exostoses themselves that coalesce and not the contiguous articular surfaces.

The articular ends become much misshapen both by overgrowths and by degenerative changes so that full ranges of joint motion are prevented and even slight amounts of joint motion may be painful, especially in a ball and socket joint like the hip. In joints with a wide range of motion any limitation of its normal arc is always more painful than in a joint which normally moves only through a small arc.

The examination of the tissues within the joints of the hypertrophic type will afford a fairly typical picture which in general is that of degeneration, hence the name degenerative arthritis first applied by Nichols and Richardson. The joint tissue first affected by this process seems to be the articular cartilage. There is practically nothing macroscopically or microscopically (unless such a joint has been recently subjected to trauma) to suggest that infection has played any part in the changes which have taken place. As I have said, cultures from both joint tissues and fluids of the hypertrophic type have been, when carefully taken, almost universally sterile, nor do these patients' sera, except in rarest instances, agglutinate strains of hemolytic streptococci.

This type of chronic arthritis is never seen in children and unless a single joint has been excessively traumatized by over-use or injury, it does not appear as a subjectively symptomatic disease until the later decades of life. Bauer has shown, however, that in certain knee joints coming to operation for other causes as early as thirty years of age, one may appreciate degenerative changes beginning in this marvelous, almost inert, tissue articular cartilage although the patient has been quite unaware of their presence and will continue to be unaware for another decade. I know of no sufficiently reliable statistics which prove that the incidence of the disease varies greatly in women or in men, but it quite as often affects the stocky, sthenic type, who tend to be overweight, as the slender, ptotic type.

Do degenerative changes associated with premature or normal ageing processes and trauma completely explain the basic nature of chronic hypertrophic arthritis? Some of us feel that

they may not. If they do, why may the onset of Heberden's nodes be quite sudden, as they sometimes are, without change of occupation? Why are they almost as common in the left hand as the right in right handed persons? Why is one hip joint so commonly affected in *malum coxae senilis* and the other spared? Why do the feet so often escape the disease? These are some of the questions needing answers. Moreover, although age advances progressively the disease by no means always progresses either synchronously or regularly. It seems often to be arrested with the increase of years.

I prefer to believe that very possibly there are other factors than mere senescent degeneration and micro or macro trauma to account for the symptom complex. There are still wise internists who are convinced that arteriosclerosis may be checked by treatment and there are a few enthusiasts left among the dermatologists who conscientiously accept fees for preventing a tendency to bald heads. My impression is strong that other possible etiologic factors may be overweight, diets which are not optimum for the individual, faulty elimination, endocrine deficiencies or disturbances, mental and physical fatigue, diminished local joint circulation, occupational trauma. It behooves us, I believe, to take cognizance of these factors rather than to take the almost defeatist attitude, that our own indiscretions or the hand of the Lord has condemned us to premature or normal senescence and "that's all there is about it."

GENERAL TREATMENT

The treatment of chronic arthritis should begin with a leisurely review of the patient's mental and physical past and present life. It should end only when all evident and obscure causes of his ill health have been sought (and if possible removed) and his joints have been restored to their greatest possible function. The approaches to the problem which the individual presents must be made from many sides. The whole man or woman must be considered and not *his* knee joint or *her* hands. When a local infection is found, for example bad tonsils, we must not in a cavalier fashion order them out, giving the patient a strong hope that his troubles are over. I am not ad-

vising against the removal of the tonsils if they obviously need removing and when the patient's condition warrants this procedure which in the adult is by no means always minor surgery. Yet the chances are quite as great that unhappiness at home, or financial worry or fatigue has lowered his resistance to "germs" which under more serene conditions he carried about in his throat in perfect peace. Not long ago I was talking with an eminent internist who has contributed much to the solution of the problem of chronic arthritis and is especially interested in the bacterial approach. At that time he entertained the hope that he had helped to discover the specific cause of the atrophic, rheumatoid type. He asked me this interesting but perhaps futile question. "What do you consider the most valuable single method of treatment of rheumatoid arthritis?" I said there was not in my opinion any single treatment. He acquiesced, but insisted that I should answer his question. After consideration I said, "mental and physical rest." This bacteriologically minded internist replied, "I agree," and my opinion of his stature grew greatly.

I am endeavoring to emphasize the point that there is evidence to suggest that generally the physician will be less likely to succeed in relieving patients by an attack made from one single angle, by surgery or by injections (vaccines, non-specific proteins and the like), than by a patient and painstaking evaluation of their difficulties and their aberrations, and by conserving joint function by every physical and mechanical means which has this end in view. Again, the whole is greater than any of the parts.

For the orthopedic surgeon to play his role with credit, I believe that almost always he should have close association with an internist deeply interested in the problem of chronic as well as acute disease. I would go farther. It is best, I think, to have one man physician-in-chief and one man the captain of the patient's fate. This captain should usually be the internist and a good orthopedic surgeon should be his first mate. The disease is so protean in its manifestations that these two heads are more than twice as valuable as one head. As the investigation of the case proceeds, the crew may well need to be enlarged to include a gen-

eral surgeon, if an appendix or a gallbladder needs removal, a gynecologist, a laryngologist, a urologist, a dentist and almost always a radiologist. A cheery and kindly nurse is often also an essential player in such a team. I have no right to give counsel to the internists and I speak without authority, but in the atrophic, rheumatoid, proliferative type from my observation as first mate, with an internist as captain, I have come to believe that these cases usually warrant at least temporary hospitalization, and importance is attached to:

1. Laboratory studies of the circulatory, respiratory and excretory systems, of the basal metabolism and blood cholesterol, of the sedimentation rate (sometimes misleading), and such other laboratory tests as may seem indicated in the individual case, with the appropriate treatment which the findings suggest.

2. Satisfying the nutritional demands of the patient and discovering the optimum diet for the individual.

3. The maintenance of the best possible body mechanics in all standing, sitting and lying postures. (This I suggest is a medical as well as an orthopedic duty).

4. The discovery of all possible foci of infection and the decision as to whether or not their removal is advisable if the condition of the patient warrants this measure.

5. The administration of such medications, sedatives, or injections as are considered to be appropriate and helpful.

6. The establishment of the patient's equanimity (and this I consider most important).

I would outline the role of the orthopedic surgeon as follows:

1. Alert attention to the prevention of deformity and the conservation of joint function.

2. Supervision of the administration of the indicated physical therapy, exercise, heat, massage and baths, occupational therapy and the planning and application of those mechanical aids in the way of apparatus for resting the joints or allowing safe and pain-saving movement in the upright or downright position.

3. Close attention to the principles of good body mechanics in lying and sitting and standing.

4. Correction of deformity when it has oc-

curred by apparatus or surgery. When the disease has become quiescent, the orthopedic surgeon must decide whether or not useful degrees of rehabilitation may be offered by further surgery and if he decides in favor of such measures, he should carry them out following a carefully planned campaign and with no turning back after his hand has grasped the plough. The success of such measures will depend upon the mental and physical condition of his patient, the skill of the surgeon and the determination of both the patient and his doctor to see things through to the end.

A little later I propose to discuss for a few minutes this serious problem of the rehabilitation of the badly handicapped atrophic arthritic patient, the fires of whose disease seem to have burnt out, leaving only the bitter scars.

TREATMENT OF HYPERTROPHIC ARTHRITIS

The treatment of hypertrophic arthritis is quite different from that of the atrophic type, and the patients less often demand even temporary hospitalization. Generally speaking, they do not appear to be sick people and resent being considered as such.

1. In my own practice I still follow the rule of having an internist make a careful and thorough general examination to establish the integrity of the various bodily systems or discover their weaknesses. They will often be found to be carrying more than the necessary weight, which burden is causing a constant micro trauma to their damaged joints. There will be a considerable group whose blood cholesterol and basal metabolism suggest thyroid medication. My internist partner, Dr. Francis C. Hall, is greatly intrigued by discovering the very remarkable clinical relief which follows the administration of some of the newer ovarian hormones, such as progynon or theelin, especially in those cases in which the symptoms are associated with a prolonged normal menopause or an artificially produced cessation of the menses by castration, x-ray or radium treatment. The administration of these hormone preparations, I should add, has also in his hands been surprisingly efficient in favorably affecting the course of many cases closely resembling the atrophic type. This has been especially true in myalgias and arthralgias, even

in some of those exhibiting swelling in or about the joints. So far these findings should be looked upon as clinical investigations the results of which will be published, if and when a sufficient number of carefully analyzed cases have been collected to warrant a report.

2. The discovery and prescribing of an optimum diet is as important as in the atrophic type.

3. The establishment of the best bodily mechanics is another essential, especially in relation to the lines of weight bearing in walking and the body thrust in sitting.

4. Active foci of infection which may be affecting the patient's general health obviously need attention, but as I remarked in relation to the possible serious aftermath of tonsillectomy in the atrophic type, it is suggested that not too many teeth be taken out at one sitting. Most investigators are of the opinion that in the hypertrophic type focal infections are unlikely to be the exciting causes of the onset of the disease, nor is vaccine treatment usually a rational or successful procedure.

5. The internist will find the problems of appropriate medication less knotty than those associated with the atrophic type.

6. The psychiatric problems also of the average patient affected by hypertrophic arthritis are more simple than those of the average atrophic case.

The role of the orthopedic surgeon is a very definite one. The affected joints of the hypertrophic type demand first of all protection and often temporary or absolute rest. There is little danger in this type that even complete immobilization for several weeks will result in more limited motion. I have stated the reasons why this is so. Prevention of deformity in these cases is important, especially in knees and hips, which tend to become flexed, but is much easier to control than in the atrophic type.

Supervision of the indicated physical therapy is as important as with the atrophic joints. By every means at our disposal the local joint circulation should be increased, but more care must be taken not to over exercise the joints. The condition of the joint and its range of motion the day after it is exercised will be a better indication as to the optimum amount of

voluntary exercise than the joint symptoms immediately after the exercise is taken. Will you allow me to use a Northern simile? The motion of a finger with a winter crack over the joint (a common New England annoyance) will be less painful as the repeated motions are made, but this motion does not heal the crack. Back support, abdominal support, knee and foot supports are extraordinarily efficient in lessening discomfort and in favoring quiescence of the local joint process.

I have mentioned the importance of correcting faulty body mechanics.

Surgery has played a small part in the therapy of hypertrophic arthritis. It seems to be chiefly applicable to those cases of continuously painful *malum coxae senilis* in which a stiff hip is less handicapping than the distressing disability of a very limited motion. Informal arthroplasties and pseudoarthroses are also occasionally successful. The characteristic exostoses may become detached and become wandering and incapacitating joint mice which demand removal.

In an attempt to illustrate graphically the points in treatment I have been endeavoring to make, I wish to present four short case histories which I have published in a previous unimportant communication.

CASE REPORTS

Atrophic, Rheumatoid, Proliferative Type. Case 1. A tall, ptotic woman of 35 years, weighing less than 100 pounds; lineaments of former beauty and happiness discernible; present disfigurement and discouragement only too evident. A musician by nature; a mother and family drudge by marriage. Elbows, hands, knees and feet swollen and limited in motion; chronic atrophic (rheumatoid) arthritis of ten years' duration. No known cause other than worry and depression. All known or imagined foci of infection removed years ago. Treatment by anti-rheumatic medication and vaccines had been unavailing. Irrevocable changes in joint tissues. This was the picture presented when consultation was sought. She was placed in a modern hospital with every facility for treatment. Fresh air, sunshine, laboratory studies, physical therapy, interested medical and orthopedic attention were lavished on her for a period of observation which lasted six months. Then return to family 1,000 miles away became financially necessary. *Result.* Gain of 20 pounds in weight. No new joints affected; activity of disease controlled, arrest seems possible if favorable mental and physical regimen

can be continued under medical observation in her own home. Report nine months later. Regimen gradually relaxed: perhaps insufficient help from busy husband, family cares, never leaves room on second story, no courage or facilities to keep up the fight: more joints involved, practically bed ridden. Tired and worn out by mental and physical struggle: may well yet live to three-score years and (perhaps) ten, but with distressing labor and sorrow: too late: permanent loss of function, serious; permanent loss of morale, more serious.

Hypertrophic, Osteoarthritic, Degenerative Type.

Case 2. Eminent lawyer of 70. Huge overweight man, former athlete, knowing good food but temperate; mentally alert, optimist by nature: weighty matters to settle; overwork. Constipation, high blood pressure. Many years of increasing disability in back, hips, knees, hands and feet, not taken seriously in an attempt to "bull it through." Rest and careful diet either not enjoined by physician or followed by patient; no hospitalization. This was the picture presented when consultation was sought; far advanced hypertrophic arthritis. Suggestions as to diet, loss of weight, relief of constipation only partially followed. Relief of back and lower extremity joints by apparatus. Course of vaccine treatment at request of patient's friend followed by no appreciable benefit, perhaps less constipation. Period of observation one year. *Result.* Increasing disability, onset of sciatica from nerve root pressure of bony overgrowths; confinement to house, optimism waning. Cerebral hemorrhage, death. Early signs and symptoms not taken seriously because tolerable. Individual as a whole not considered or conserved.

Atrophic, Rheumatoid, Proliferative Type. Case 3. College student of 22; duration of symptoms six months; cause unknown. Spindle-shaped tender, dusky swelling of several midphalangeal joints of hands, tender swelling of metatarsophalangeal joints of feet, minor joint symptoms in several other joints. No permanent joint damage; fatigue; constipation, low blood pressure, moderate secondary anemia, bad body mechanics, vasomotor disturbances. Tonsils already out, teeth checked up, no known surgical focus. Medication had been without avail. Never laid up but growing worse. This was the situation when consultation was sought. *Treatment.* Hospitalization for six weeks. Unsuspected and innocent Neisser infection discovered in course of thorough investigation. Rest, heliotherapy, steam baths, local treatment to source of infection; body mechanics corrected. Period of observation seven months; steady improvement. Has returned to college; considers herself practically well. For the last three years,

after taking a secretarial course, she has worked in several clerical capacities. There has been no acute exacerbation of her joint troubles, though if overtired and worried or following a cold, some of her joints remind her of her old incapacity. A brand snatched from the burning. Alas, we do not see these patients early enough, as a rule, to make it possible to arrest the disease so quickly.

Hypertrophic, Osteoarthritic, Degenerative Type.

Case 4. A woman of 50; increasing incapacitating symptoms in back and both hips for six years. Roentgen rays show well-advanced hypertrophic arthritis in the spine and both hip joints; double malum coxae senilis. Low blood pressure, low basal metabolism, anemia; bad body mechanics, overweight, constipation, mental depression. All surgical foci including uterus had been removed. Medication ad nauseam. Little left save the arthritis which was going on as merrily as ever. This was the picture when consultation was sought. *Treatment.* Complete medical review; rest and heliotherapy enjoined. Endocrine necessities met, body mechanics corrected, support afforded to affected joints, overweight reduced, prolonged study of alimentary needs, diet stabilized, constipation relieved. Frequent periods of hospitalization. Motion in hips retained, slightly less in range but painless. Period of observation eight years. End result for last four years; enjoys excellent health, has walked two miles, motors freely, no longer mentally depressed, runs a farm. Has recently been to Europe alone and returned without untoward event. Process seems quiescent.

CONCLUSION

The role of the orthopedic surgeon in the treatment of arthritis will continue until the internists have shut off the supply of threatened and confirmed derelicts. That day I fear may be a long way off, but to it we must aspire as "Faith is the substance of things hoped for, the evidence of things not seen." (Hebrews 11, 1.) Until that time the orthopedic surgeon should tread his measures hand in hand with the internist. He may even join the ranks of those who are seeking to discover the background and foreground causes of these syndromes by the methods of pure research. In fact, the occasional orthopedic surgeon has already contributed to such research. The conservation of joint function will continue to be his chief endeavor and the restoration of impaired joint function should be a most important and rewarding by-product of his labor.

NINETEENTH CENTURY CONTRIBUTIONS TO THE TREATMENT OF PULMONARY TUBERCULOSIS

SYDNEY JACOBS, M. D.

NEW ORLEANS

Tuberculosis can be successfully treated today largely because of the advances made during the latter half of the nineteenth century, that golden age beginning shortly after 1840 when the foundations for the modern campaigns of disease-prevention and mortality-reduction were laid. The experimental and clinical observations of these five decades were more fruitful in helping men to conquer tuberculosis than were all preceding centuries.

There were several reasons for this. The stage had been set, so to speak, by the advances in pathology, by Laennec's demonstration of the unity of phthisis and tuberculosis and by the ever-increasing acceptance of the doctrine of the curability of the disease. With Koch's isolation of the causative bacillus there was only to be expected a tremendous impetus to any such campaign, but even more powerful was the incentive to find a specific method for curing a malady at last recognized not to be inevitably fatal.

Prior to this time, therapy for the tuberculous was a commentary on the credulity of the populace and the ignorance of the profession. So long as tuberculosis was held to be a visitation of the gods, an omen of displeasure of the evil spirits, a manifestation of some hereditary taint or even a mysterious malady defying study, it is obvious that no real progress could be made. Logical therapy awaited logical thinking about the disease, and such logic was not forthcoming until the minds of medical men were willing to abandon the useless dictums of the past and to accept the accumulating mass of scientific data. Tuberculosis as a public scourge could not be conquered until the relationship of public health measures to spread of the disease was appreciated and until the medical thinkers would learn that phthisis was not only a pulmonary affection but also disease of a society that permitted its members to be exposed.

Nineteenth century advances in physiology, pathology and bacteriology were paralleled by

attempts to apply them to clinical medicine. These advances were not by any means uniform, and frequently methods of therapy were employed empirically only to be substantiated by subsequent investigators. In general, it may be said that there evolved during this time three distinct approaches to the successful treatment of the tuberculous patient: the hygienic-dietetic, the surgical and the immunological. The first was a persistence in more intelligent form of a mode of therapeusis known to the ancient Greeks; the second was an outgrowth of those bacteriologic studies which postulated for every disease a specific infection and therefore a definite infectious focus to be suppressed or eradicated; the third was the horribly misdirected hero-worship of the genius Koch who had blundered once too dramatically.

KOCH AND TUBERCULIN

Perhaps it is well to consider first of all the last of these approaches. When Robert Koch announced in 1882 his discovery of the tubercle bacillus, mingled scepticism and enthusiasm greeted his presentation. Despite the fact that his was a masterful array of facts arranged in an orderliness that frustrated scientific fault-finding, nearly ten years elapsed before the general body of the profession was satisfied. By that time however, accumulated data had been so thoroughly corroborative of his work that the eyes of the entire medical world were turned to Berlin to see what next the Master would do to astound them.

They did not have to wait long. Koch had been continuing his experiments with the tubercle bacillus and found that if he grew it on broth, he could extract in glycerin a substance which he called "tuberculin". When he injected this tuberculin into the bodies of tuberculous individuals, he elicited a characteristic response of inflammation; when he injected it into the bodies of nontuberculous individuals, there was no such sequel. The natural inference was that he had found a substance useful in differentiating the tuberculous from the nontuberculous. In pursuing his researches on the actions of this substance, he was lead to study its effects in treatment of phthisis and soon came to believe that such therapy was of great benefit to his patients.

In a short time, Koch was ready to announce the results of his observations. It is not definitely known why he was so quick to make public his studies but there is real reason to believe that he was strongly influenced by the Kaiser, William II, who was anxious to achieve the reflected glory of what would have been a truly magnificent contribution to civilization. In 1890, before the Tenth International Medical Congress in Berlin, Koch reported that "he had hit upon a substance which has the power of preventing the growth of tubercle bacilli not only in the test tube but in the animal as well". Doubtless this was to have been only a preliminary report, but the pitiless searchlight of relief-seeking humanity was thrown upon him with all its intensity. Subsequent presentations were as ill-founded; November 3, 1890 he read a paper, "On a further communication on the remedy of tuberculosis", and it is related that the next week 1500 medical men arrived in Berlin to see the remedy with which "phthisis can be cured in the beginning with certainty". He published another paper November 17 of the same year and yet another one January 17 of the next year. When reproached for keeping secret the composition of his new tuberculin, Koch replied that he feared to make it public too early lest the general body of medical men use it inadvisedly and thus cause harm.

Since the supply of tuberculin was at first scanty, its use was limited to a few European physicians. Public demonstrations were conducted in London by Heron and by Cheyne both of whom satisfied themselves of the feasibility of using tuberculin for all forms of tuberculosis. Within a few months after its introduction, this method of therapy had been accepted by all medical men of Germany, and visitors were astonished how generally it was employed. They noted the frequency with which patients had general reactions and severe ill-effects. The end of this wave of enthusiasm came only after literally thousands of patients had been materially or fatally injured through this means.

The tragedy of this dramatic experiment was early realized, and almost as quickly as it was adopted was it abandoned. We can hardly blame Koch for hoping to produce something

analogous to the diphtheria antitoxin of von Behring or the antirabies inoculations of Pasteur. It may be better to agree with the observer who called it a lay verdict forced by lay opinion on the general practitioner. In fairness to him, we should recall that almost single-handed he was able to prove the cause of tuberculosis, a contribution too precious to the world to be off-set by even the tragically startling effects of tuberculin therapy.

THE HYGIENIC-DIETETIC APPROACH

The development of a rational hygienic-dietetic regimen was really initiated in this golden age, but of forerunners there were legion. From the time of Hippocrates, there was belief that tuberculosis could be ameliorated by travel to a more equable climate, exercise in the open air and adoption of sensible modes of living. Pliny had written of the curative powers of the sun; Hippocrates advocated complete bed rest for hemoptysis; while early Greek and Roman physicians prescribed sea voyages to arrest the severity of phthisis. A famous 18th century British orthopedist, Jean Pierre David, had noticed that whenever he insisted on complete bed rest for a patient with caries of the spine, the pulmonary status improved. Black and Buchan at the opening of the eighteenth century advised phthisical patients to drink plenty of milk and to exercise in the open air. Thomas Sydenham wrote of the beneficial effects of open air exercise, especially horseback riding.

It is evident that these earlier physicians had some intimation of the value of what we might term the hygienic-dietetic approach, but they did not develop their ideas further or make any attempt to formulate a plan for the tuberculous patient to follow in his quest for health. The first man to do this was George Bodington who established what was the first sanatorium for the tuberculous near Birmingham, England, about 1840. Just when he began to accept such patients for treatment is unknown, but as early as 1833 he had written that the "open air" methods of treatment were to be preferred to all others. In 1840, he published a pamphlet, "An Essay on the Treatment and Cure of Pulmonary Consumption on Principles Natural, Rational and Successful". He had only the vaguest of ideas concerning the etiology of

tuberculosis, but he did note its greater frequency among city dwellers as compared with farmers and for this reason advised consumptives to take to the country for their cures. He condemned the then prevalent methods of treatment: confinement in a closed room, inhalation of various gases and a starvation diet. It is interesting to note that he grasped somewhat the social implications of the disease for he urged erection of municipally supported institutions for the care of tuberculous patients. His views were strongly opposed, and within a few years he had ceased to accept consumptive patients, converting his establishment into one for the insane.

Bodington's views made relatively little impression on medical minds, and it is highly probable that the three men most responsible for the establishment of the sanatorium movement (Brehmer, Dettweiler, Trudeau) had never known of his work.

THE TEACHINGS OF BREHMER

Herman Brehmer, who was born in 1826, spent all of his life trying to convince the medical profession of the curability of pulmonary tuberculosis. Early in his career, he was influenced by the writings of Rokitansky who had found healed tubercles in the lungs of people never diagnosed as being tuberculous; this observation was so common at autopsy that the only logical inference was that tuberculosis could heal if conditions were favorable. He arrived at such views despite Virchow's dominating teachings and despite the commonly accepted maxim that "the greatest calamity that may befall a consumptive is to become tuberculous." When Brehmer in 1853 delivered his thesis, "Tuberculosis is Curable," he aroused the ire of the entire profession. In 1849, the sister of his first wife, Marie von Colomb, established a small hydropathic institute in Gobersdorf, Silesia; later it was necessary for Brehmer to move there as the superintendent, and he immediately began to accept tuberculous patients.

Believing tuberculosis to result from a heart too small to circulate blood adequately through the lungs, Brehmer centered his plan of treatment about efforts to increase cardiac musculature. The therapeutic prescriptions were in-

deed harsh. Patients had to take daily baths in the open air and to receive hydrotherapy from his own hands. A meticulous technic was evolved; a stream of water the thickness of the thumb was delivered against the bare skin from a height of exactly five meters and with great force. No one but Brehmer himself was allowed to superintend such treatment, but the rest of the plan was in marked contrast to such rigidity of prescription. He refused to see patients for weeks at a time except for the brief period of hydrotherapy and permitted them to follow their own inclinations as to the amount of exercise they needed. He formulated only the most general rules for exercise and had graded walks constructed with benches all along the road to tempt the weary patient to rest. Since the patient ascended the grade when he began his exercise, the way back to his bed was down grade and therefore not so taxing. Only in his later years did he appreciate the value of complete rest in bed.

He was the first to insist on forced feeding and was responsible for the innovation of taking temperatures of his patients every two hours. So convinced was he of the necessity for constant exercise that he would not permit his patients to refrain from their walks unless the weather was forbidding, and to provide for such he had glass-enclosed walks constructed. Denounced as a charlatan in 1853, Brehmer lived to see his doctrine of the curability of tuberculosis preached by every clinical professor in Europe by 1889. The benefits attributed to his mode of therapy by far exceeded those of any other known system.

Brehmer's influence was felt by Peter Dettweiler who was born in 1837 and had a pulmonary hemorrhage when yet a young man. He recovered so quickly that he was convinced of the curability of tuberculosis and went to Brehmer's sanatorium to be cured. He stayed on as an assistant after he had regained his health, but disagreed so violently with Brehmer on many points that it became necessary for the two to part company. Dettweiler then established his own sanatorium at Falkenstein where he substituted reclining chairs for the open-air exercises practiced at Gobersdorf. Disregarding inclement weather, patients stayed out-of-doors reclining in these chairs the greater

part of their stay there. Only the extremely ill or febrile patients remained within the buildings during the day. As soon as a patient had regained sufficient vigor, graduated exercises were begun.

To the influence of Brehmer may also be attributed the founding of the sanatorium movement in this country. Edward Livingston Trudeau was a young New York physician who had gone to the Adirondacks to regain his health. Born in 1848, he was educated in Paris and returned to this country at the close of the Civil War. In 1865 his brother died of tuberculosis after the two had been together almost constantly. Three years later he entered the College of Physicians of New York City and was graduated after a year of study. Subsequently, attacks of fever were attributed to malaria, swelling of the cervical lymph nodes was called scrofula and loss of weight and strength attributed to other conditions. In 1871, Theodore Janeway informed him that he had tuberculosis; he immediately departed for the Adirondacks expecting to spend his last days where hunting and fishing were appealing. Arriving at an isolated community, he soon noted that he was regaining his health and was enabled to practice medicine among the village people.

In 1882, Trudeau chanced to see a copy of Anstie's *English Practitioner* containing an account of a visit to Brehmer's Sanatorium in Gomersdorf. Being materially influenced by this article, he decided to establish a similar institution in the Adirondacks. Financial obstacles prevented his erecting a series of large buildings; so he started with a number of cottages each of which accommodated only two patients. The first of these was opened in 1884, and was called "The Little Red" because of its bright color. With an increase constantly in the number of patients seeking admission to his cottages, it was necessary for Trudeau to erect larger buildings after the fashion of Dettweiler. From this modest start arose the country-wide system of sanatoria in the United States.

SURGERY

The third concept, that tuberculosis could be cured by surgical means, is also a growth of the nineteenth century, but its seeds had been

planted centuries before. It is known that Hippocrates introduced air into the chest for pulmonary suppurations, that Georgius Baglivius in 1697 advocated incision into the chest for various pulmonary diseases, and that Sir Edward Barry in 1727 wrote of similar measures for lung disorders. Yet there was no really systematized lung surgery until the nineteenth century was well under way. Interestingly enough, it was not a surgeon but an experimental physiologist who showed the way. In 1821 James Carson of Liverpool wrote concerning tuberculosis, "It has long been my opinion that if ever this disease is to be cured, and it is an event of which I am by no means disposed to despair in all cases, it must be accomplished by mechanical means or in other words by an operation". Twelve years later, he wrote, of pneumothorax, "The lung would by those means be reduced to a quiet state of collapse and the elastic fibers separated by the ulcer would be brought into contact. The lung would in consequence of the absorption of air contained between the two pleurae be dilated to a contiguity with the internal surface of the chest, and if the other lung were diseased, it might be treated as the former had been." Carson's work was done experimentally on rabbits, and he succeeded in disproving the oft-quoted belief in the incompatibility of pneumothorax with continued life. He induced a surgeon to perform the operation on two patients, but the cases selected were not suitable for the procedure, and both his subjects died. Accordingly, the operation was abandoned as impracticable. In 1832 Houghton and again in 1837 William Stokes of Dublin demonstrated that perforation of a lung need not necessarily be followed by death or might even be succeeded by temporary amelioration of symptoms, but such observations were generally disregarded, and pneumothorax as an operation was considered impracticable if surgeons thought of it at all.

During the period of the ascendancy of surgery, there were naturally many attempts to devise operative measures to cope with the problems of the tuberculous patient; most of them were intended to eradicate the infected areas. Such operations were doomed to failure; the pioneers in this field, Krimer (1830), Gluck

and Bloch (1881), W. Koch (1882) and Godlee (1887) were working without the benefit of adequate diagnostic and surgical facilities. The ensuing fatalities discouraged further attempts of this sort.

ARTIFICIAL PNEUMOTHORAX

There is considerable controversy as to priority in the establishment of artificial pneumothorax by the closed method. Despite such dispute, it is generally admitted that Carlo Forlanini was the first to demonstrate publicly the practicability of the procedure. Born in 1847, Forlanini was graduated in medicine at the age of 23 and shortly thereafter took his place on the staff of the Ospedale Maggiore of Milano where he subsequently rose to head the Department of Dermatology. Apparently his interest in tuberculosis began early in his career for in 1874 he published a report of a case of tuberculosis of the myocardium. In 1882, just six months after Koch had announced his discovery of the tubercle bacillus, Forlanini read a paper entitled, "As a Contribution to the Surgical Therapy of Phthisis: Ablation or Pneumothorax?". He had never performed or even seen pneumothorax performed and was recommending it only because the available evidence seemed to indicate its use. He was uncertain of the reception to be accorded his presentation and therefore proceeded most cautiously. He cited Emil Toussaint's finding of 24 cases of spontaneous pneumothorax with recovery and therefore reasoned that it was not inevitable that death follow establishment of pneumothorax, either induced or spontaneous. He further argued that if patients improved after such an accident, it would be well to imitate the natural phenomenon since most ulcers heal when the ulcer-bearing portion of the body is placed at rest. It is of interest that before he had performed the operation once, he anticipated the major complications of the procedure: shock, mediastinal displacement and empyema. He next began to collect patients for the procedure but did not report his results until 12 years later.

The technic employed by Forlanini was quite similar to that of today except that he did not have the advantage of the manometer. At first

he introduced 250 c.c. air daily, later lengthening the interval to one week. He soon recognized the rapid absorption of oxygen from the pleural sac and recommended the use of pure nitrogen. He commented in detail on the effects of adhesions in preventing satisfactory collapse of the lung.

The controversy as to priority in establishing pneumothorax has never been properly settled. According to Frederick Tice, John B. Murphy in 1888 wrote to Forlanini to request dates of his first operations and never received any response. When Murphy read his famous paper "Surgery of the Lung" in 1898, he included artificial pneumothorax as one of the operations described in great detail. He used a trocar to inject air and administered large amounts (800-3000 c.c.) with the object of keeping the lung completely collapsed. The lung was permitted to re-expand almost completely before air was administered again. He recognized the necessity for continued pneumothorax over a period of years. Even at this early date, he was advising plombage and apicolysis wherever adhesions prevented proper administration of pneumothorax. Probably he was the earliest worker in oleothorax for he mentioned the injection of mineral oil into the pleural cavity. With Tice, he was a pioneer in the establishment of a clinic for the administration of pneumothorax to the ambulatory patient at the Dunning Tuberculosis Institute, the oldest county tuberculosis hospital in this country. Working in 1898 without adequate roentgen ray facilities, they established a program followed in great measure today.

SUMMARY

Thus the physician of today who prescribes bed rest for his tuberculous patient is following the lead of Brehmer, Dettweiler and Trudeau; if he practices artificial pneumothorax, he is applying knowledge gleaned at the beginning by Forlanini and Murphy; while if he prefers to employ some of the modern ultracautious technics for administering tuberculin, he is only trying to work with the tools fashioned by Koch. In short, he who today practices the healing art among the tuberculous is but distributing with profit the contributions of the nineteenth century.

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THE SOUTHERN MEDICAL ASSOCIATION MEETING

Arrangements have been completed for the holding of the Thirty-first Annual Meeting of the Southern Medical Association in New Orleans, from Tuesday, November 30, to Friday, December 3, inclusive.

Headquarters will be at the Roosevelt Hotel but all of the convention features, the scientific meetings, the scientific exhibits and the tech-

nical exhibits will be at the Municipal Auditorium. All programs have been completed and will appear in the November issue of the Southern Medical Journal. The space for scientific and technical exhibits has been utilized to capacity.

The number of requests for hotel reservations, which up to this time exceeds 1200, indicates that this is going to be a very largely attended meeting. While there are ample hotel accommodations still available, doctors who are planning to attend this meeting should immediately communicate with Dr. M. T. Van Studdiford, Chairman of the Hotel Committee.

The meeting will be featured by the holding of public sessions on Tuesday night at the Municipal Auditorium at which prominent speakers will address a two hour meeting. From the program it will be noted that the subject matters are of very general interest and will be presented by able speakers.

During the convention there will be a daily fifteen minute broadcast over Stations WSMB, WDSU, and WWL, at which time short talks will be made on subjects in which the profession, as well as the public of the state, should be particularly interested. Provisions have also been made for the appearance of out-of-town speakers before a number of the large luncheon clubs.

In preparing the program, both scientific and entertainment, nothing has been left undone toward making it interesting and pleasant. The program prepared by the Arrangement Committee appears on page 304.

L. L.

THE CARVILLE LEPROSARIUM

An outstanding paper in the September issue of the Journal by Dr. Dimitry, has aroused much interest and comment. The article on The Introduction of Leprosy in Louisiana and the First Leper Hospitals excited both historical and also contemporaneous interest in the subject of the leper hospital of the past and of the present.

The United States Marine Hospital at Carville at the present time is an institution which honors the United States Public Health Serv-

ice. It is well equipped and it has a personnel of physicians who are interested primarily in leprosy and research problems presented by this disease. In spite of the apparently adequate provisions for the care of the leper, it was felt that the institution could be improved still further so, therefore, in August 1937 there was appropriated \$4,600,000 for rebuilding and enlarging the institution. One and a half millions have already been made available and the whole sum will be spent in a period of approximately three years. With the expenditure of this money undoubtedly there will be constructed one of the outstanding leprosaria in the world.

The hospital is maintained at the present time on a budget of approximately \$400,000 a year, to which sum has been added certain grants for research work. The research problems have to do with the bacteriology and pathology of the disease and an important field study on the epidemiology of leprosy. The medical staff consists of four doctors on a full time basis and one dentist. In addition to these men there are four attending specialists who make weekly or bi-weekly visits to the institution.

It might be of interest to know that since 1894 there have been treated 11,063 patients and the present census shows 372 patients in the hospital. The care of these patients is magnificent. They are extremely well treated both from the physical and from the medical point of view. Their quarters are excellent and everything is done to make their unfortunate lot as happy as can be. Altogether at the present time it might well be said without qualification that the institution, when reconstructed, will be as adequate and complete as such an institution could be made.

From little seeds giant oaks spring; from the small beginning of the able and energetic Doctor Dyer there has developed a great leprosarium.

NUTRITION AND GRAVES' DISEASE

If there is one disease that stands out as a disorder which requires cooperative efforts of

both the surgeon and the internist it is Graves' disease. Both of the two types of specialists should be, and are, interested in the management of these patients and frequent have been the discussions as to the proper form of treatment, whether medical, surgical or roentgenologic. In spite of the difference in feeling about the care of the patient it is quite generally recognized that it requires good teamwork to give to the patient the best possible medical services.

In a recent paper by Means, Hertz and Lerman* one of the factors that the average medical man disregards is brought out forcibly, to wit, the proper nourishment of the thyrotoxic patient with an extreme degree of malnutrition. In the first part of this interesting presentation the authors call attention to a fact which is not generally appreciated, namely that a certain small group of patients develop symptoms of hyperthyroidism succeeding forced efforts to reduce weight. Having discovered 35 such cases they believe that this factor is undoubtedly of some significance, particularly as it is known that there are several types of episodes which may institute active thyrotoxicosis such as physiologic strains, pregnancy, psychic trauma and so on. However, their main thesis has to do with the necessity of feeding patients a diet which is adequate, not only in supplying the increased energy requirements of the individual who is burning up nourishment at a rate considerably higher than the normal individual, but also to meet other indications. Although an anemia is by no means common, nevertheless there is a certain number of people who show evidence of hypochromic anemia in spite of a count which may be reasonably high. These patients definitely require a diet containing plenty of iron and this diet should be supplemented by iron as a drug. They have noted in a certain group of people the skeleton shows at times marked decalcification and they point out that roentgenologic study should be made of the bones, notably in those patients who have marked bone decalcification which may be suggested by deep aching pains in the extremities

*Means, J. H., Hertz, S., and Lerman, J.: Nutritional factors in Graves' disease, *Ann. Int. Med.*, 11:429, 1937.

or back. These patients should be given calcium.

The meat of the article inasmuch as increased frequency is concerned, lies in their statement that vitamin B₁ is needed to excess in patients who have an increase in metabolic rate; their intake of vitamin B₁ may be sufficient for a normal person but the need for it increases in parallel fashion to the metabolic rate. For this reason they recommend in the undernourished individual the administration of yeast and yeast in large quantities. If this vitamin does nothing else it at least increases the appetite significantly and it may also have some beneficial action on the heart.

cantly and it may also have some beneficial action on the heart.

The advice then is to give to malnourished thyrotoxic patients large quantities of carbohydrate, a protein intake proportionate to their weight and age, and fat as would be given to a normal person. To this ration are added calcium or iron, if indicated, and in every instance vitamin B₁ not to forget of course the usual preoperative iodine. With this regimen the authors feel that a therapeutic program is provided for the patient which will make him or her a good operative risk.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

TRI-STATE HOSPITAL

The meeting was called to order on September 23, 1937, by Dr. J. E. Knighton, Sr., acting chairman. There were 32 members of the regular staff present. The routine business was disposed of as usual.

Dr. J. M. Gorton, Secretary of Tri-State Medical Convention, was introduced and announced the next meeting, to be held in Shreveport October 27 and 28. The chairman of program committee, Dr. C. R. Gowen, introduced and commented on the men who are to speak at the meeting.

The first case, presented by Dr. W. S. Kerlin, was that of a white male aged 42 years, who had been under observation for a period of five years. His complaints during this time, in addition to chronic systemic syphilis, consisted of symptoms referable to hypofunction of all the endocrine glands. The terminal illness resembled encephalitis. An autopsy was done by Dr. W. R. Mathews who presented the gross and microscopic findings in very complete manner. The clinical diagnosis of Simmond's diseases was verified by the pathology which was found, there being practically no pituitary cells as this organ had been replaced by fibrous tissue. There was no evidence of any relation between the luetic infection and the glandular abnormalities. This presentation was discussed by Drs. D. L. Kerlin, D. H. Duncan, C. R. Gowen and W. P. Butler.

The second case, presented by Dr. W. B. Worley, was that of a four-year-old white female child who presented a sudden severe abdominal pain and other symptoms definitely indicative of intestinal obstruction. Laparotomy was done and revealed a large section of the small intestine to be gangrenous. Because of the critical condition, an enterostomy was the only procedure undertaken. This was of no avail and a fatal outcome resulted a few hours later. Autopsy revealed the presence

of a cyst about four inches in diameter, which was found attached to the jejunum about six inches below the duodeno-jejunal junction. This structure had produced twisting of the jejunal mesentery with resultant gangrene and obstruction.

The third case, presented by Dr. J. E. Knighton, Jr., was that of a white female 25 years of age, whose complaint was heart trouble. In addition to general findings of cardiac failure, there was definite evidence of mitral stenosis and of aortic insufficiency. There was fever, a palpable spleen, positive blood Wassermann, and one of three blood cultures revealed a growth of *Staphylococcus albus*. The questions of rheumatic, luetic and bacterial valvular lesions were discussed, and clinically, it was concluded that there was rheumatic mitral stenosis and aortic regurgitation, because of the fact that fluoroscopy revealed calcification in these valves. It was further concluded that subacute or acute bacterial endocarditis was present. Death ensued six weeks after the onset of acute symptoms and autopsy revealed rheumatic involvement of the mitral, tricuspid and aortic valves. There was a small vegetative growth (aortic) and a much larger (1½ cm. in diameter) growth on the upper surface of the medial mitral valve leaflet. In addition there were multiple infarcts in the spleen and smaller ones in the kidneys and at the base of the right lung. The pathologic findings and the cardiac specimen were presented by Dr. Butler.

After a discussion of the statistical and mortality reports of the previous month, the meeting adjourned. The next meeting will be held October 28, 1937.

Tom Glass, M. D., Acting Sec.

NORTH LOUISIANA SANITARIUM

The meeting was called to order by the President on September 28, 1937, with 33 members pres-

ent. After the disposal of routine business, attention was turned to the scientific program.

Dr. Herold gave a case report of a male patient, 20 years of age, who stuck a nail in his foot and received tetanus antitoxin one week prior to admission and subsequently developed symptoms that suggested poliomyelitis to his family physician who sent the patient to Dr. Herold with a probable diagnosis of infantile paralysis. Observation of the patient and studies of the spinal fluid suggested a diagnosis of encephalitis of the same type seen in the St. Louis epidemic of encephalitis and so reported by Dr. David Barr. The patient made an uneventful recovery except for some slight difficulty in swallowing and inability to articulate well. Subsequent examinations showed complete recovery. Treatment consisted of one spinal drainage, urotropin by vein daily and symptomatic care. The case was discussed by Dr. Rigby.

Dr. Rougon gave three case reports that were representative of the poor urologic risks for prostatic surgery and described a method of handling them without too much shock and yet correcting their pathologic conditions in a manner that would as a general rule keep them well for the remainder of their life expectancy. All three cases presented high N. P. N. and creatine values and all were acutely ill with acute retention of urine and uremic symptoms. These cases were first decompressed with retention catheters and a subsequent suprapubic cystotomy done and patient sent home to convalesce. On readmission, under spinal anesthesia, the suprapubic wounds were opened and the middle lobe removed; the remainder of the gland around the vesicle orifice was then reamed out with cautery punch. All three of the patients withstood the operation without the least evidence of shock or hemorrhage and all made uneventful recoveries. The report of these three cases well demonstrates the keen surgical judgment of not attempting to do the radical classical prostatectomy on individuals who are very poor surgical risks and only attempting to complete a measure that will adequately carry them through their life expectancy.

H. M. Trifon, M. D., Sec.

MERCY HOSPITAL

The Staff of Mercy Hospital held its first meeting since the summer recess on the evening of October 6, 1937.

Dr. Battalora gave a brief talk on "Internal Derangements of the Knee Joint" emphasizing particularly the diagnosis and treatment. The subject was most interestingly presented and appropriate because of the number of knee injuries acquired during foot-ball season.

Two cases were discussed in the mortality investigation. One had a primary bronchiogenic

adenocarcinoma of the upper lobe of the right lung with cerebral metastasis. The symptoms were entirely cerebral and a cystic glioma was found in the right temporo-occipital region and left cerebellum. An autopsy was done which verified the above anatomical diagnosis. There was a discussion by the staff.

A second case, presented by Dr. Hauser, was a chronic alcoholic with malignant hypertension who was admitted to hospital for severe hematuria. Despite treatment no improvement in his condition was discernible and he was discharged as unimproved. Some time later he was readmitted in a stuporous condition with blood pressure of 290/150, he gradually faded and died of uremia.

The Staff announced the purchase of an electrocardiographic machine and a subcutaneous outfit. The Hospital was also given a surgical unit and a Tomas evacuator by members of the Staff. The Hospital received also a most modern operating room light, made possible by the workings of the Women's Auxiliary.

H. Ashton Thomas, M. D., Sec.

FRENCH HOSPITAL

A regular meeting of the Staff was called to order, with Dr. R. L. Gordon presiding, and discussion of interesting cases and deaths occurring during the month was then opened.

The scientific program consisted of a talk on the electrocardiogram in cardiac disease by Dr. E. Hull. He explained how the electrocardiogram shows the direction of travel, duration of travel and intensity in millivolts of the electrical impulse in the heart. The electrical impulse starts at the sino-auricular node, spreads through the auricles giving rise to the P. wave, thence to the A. V. node and during invasion of the musculature giving rise to the Q. R. S. complex, then the final T. wave, which occurs during the process of return to the resting state. After explaining the meaning of the three leads, he gave a series of lantern slide demonstrations, showing how the above waves and their related time intervals were affected in the various cardiac irregularities and also showed how the electrocardiogram could be definitely diagnostic in certain unrecognizable conditions clinically.

Dr. Hull was congratulated by the entire Staff for a very interesting talk.

There being no further business the meeting was adjourned.

R. E. Rougelot, M. D., Sec.

GRADUATE SCHOOL LOUISIANA STATE UNIVERSITY MEDICAL CENTER NEW ORLEANS

The scientific meeting of October, 1937, was called by Dr. James T. Nix, Dean of the Graduate

Schcol. Dr. Bjarne Pearson presented the following paper:

PRIMARY ANGIOMA OF SKELETAL MUSCLE

As a group, tumors of blood vessels are commonly encountered by surgeons and pathologists. They vary from the vascular nevi which appear in the skin to large congenital malformations which are situated on the face and oral cavity and occur shortly after birth. Angiomas of special locations such as bones, muscles and central nervous system are not so common but because of their anatomic location are prone to produce pain, disturbance of function and deformities which demand some sort of therapeutic procedure.

Of the 570 hemangiomas reported by Geschickter¹ from the Johns Hopkins Hospital there were 135 central angiomas, 370 peripheral angiomas and only 65 angiomas of special locations. Among the central angiomas, the liver was the most frequent, then the heart valves and the internal viscera. The peripheral angiomas are divided nearly equally into those of the scalp, face, oral cavity, skin, arms and legs. In this group the oral cavity and the face had the greatest number. Of the 65 angiomas of special location, 12 were in the bones, 10 in the muscle and 42 in the central nervous system. The muscle angiomas constitute 1.7 per cent of all the vascular tumors reported in this series.

The group that we are concerned with in this report are those that originate primarily in voluntary muscle. The first case was probably described by Liston, in 1843, who reported an angioma of the semimembranous muscle under the caption of an erectile tumor of the popliteal space. Another early report is one by Muscatello² in 1894 who also studied their histologic structure. In 1908 Davis³ reviewed the reported cases and found 147 in the literature. The last report consisted of 256 cases by Jenkins and Delaney in 1932.

In order of frequency the most common site of this tumor occurred: in the gastrocnemius, quadriceps femoris, vastus internus, triceps, masseter, latissimus dorsi and biceps femoris. Eighty per cent occurred before the age of 20, and 95 per cent before the age of 30 years. The lower extremity seems to be the most common site, occurring in 107 of the 256 cases reported by Jenkins and Delaney. Primary angiomas of muscle are practically confined to the white race, occurring only once in the negro and seven times in the yellow race. Trauma was a definite factor in 17 per cent of the cases. This is of interest in so far as Dawson⁴ found changes in striped muscle similar to hemangiomas while studying the healing in incised muscles. Factors in development other than trauma are suggested by Virchow as those arising from disease in the vasa vasorum. Ribbert assumes that they may also develop from embry-

onic rests. A congenital factor is probably important as 47 per cent occur in the first decade.

The gross aspect of the tumor has been designated as: diffuse, circumscribed or partially circumscribed. Most of the tumors are diffuse in nature and have a tendency to infiltrate the surrounding muscles. The circumscribed type which is uncommon tends to have a fibrous capsule. The diffuse type has a tendency to involve the nerves and vessels. The color is blue or red especially if it is of the cavernous type. Because of the tendency to thrombosis of this type with subsequent organization and calcification, phleboliths are encountered. These are present in less than 10 per cent of the cases but if revealed by the roentgen ray are an added factor in making the correct preoperative diagnosis. The tumor is usually soft and spongy but may be hard if there is much connective tissue proliferation. Because of the extreme vascularity a great deal of hemorrhage may be encountered by biopsy or operative procedure. Preoperative diagnosis is facilitated by aspiration of blood from the tumor. This was tried in one of our cases but failure was undoubtedly due to the small capillary structure of the tumor. The histologic structure of the cavernous type simply consists of vascular elements in a stroma of connective tissue. The spaces are usually lined with a single layer of endothelium. Thrombi in different stages of organization are present. Intimal proliferation of small arterioles is present, often leading to their occlusion.

The pure capillary angiomas are encountered in a little more than 3 per cent. As a rule, but not always, these tumors are more fibrous and firm in their consistency and appear more whitish in color. Microscopically they are composed of varying sized smaller arterioles lined with one or several layers of endothelium. The surrounding stroma is composed of a great deal of connective tissue. Actual vascular proliferation can also be seen. In all the varieties of angiomas various destructive processes can be seen in the muscle fibers. There are early changes in the muscle cells, such as loss of striations, and later hyaline changes and fatty degeneration. Fatty change was present in the tumors recorded in over 12 per cent of the cases. Thus the terminology has been further modified by calling some of these lipo-angiomas, but this adds to the confusion. Similarly, with a large amount of fibrous tissue they have been named fibro-angiomas.

In dealing with a tumor that actually and aggressively invades muscle, and especially if the tumor in the main is of the capillary type with abundance of fibrous stroma and active neoformation, one is confronted with the question of malignancy. In reviewing the 256 cases with actual follow up and behavior after operative procedure,

it is evident that they infiltrate the muscle which is the seat of their origin and extend into the surrounding muscles, and may even penetrate the aponeurosis and involve bone. Most benign tumors grow by expansion in contradistinction to hemangiomas of muscle which grow in multicentric foci and actively infiltrate the surrounding tissue. One may call attention to Ewing's⁵ case of a young girl in which a plexiform angioma involved nearly all the muscles of the forearm, fat and subcutaneous tissue. Jenkins and Delaney⁶ in reviewing the reported cases found recurrences present in approximately 6 per cent and mostly after incomplete removal. In a group reported by Davis and Kitlowski⁷ consisting of 212 cases there were three in which partial repeated excisions were necessary for complete recovery. Two required partial excision and later amputation and five required primary amputation. Geschickter had 10 cases occurring in muscle with eight recoveries. In two cases the tumor recurred repeatedly and amputation was necessary.

The true malignant angioma with or without metastasis probably does not occur primarily in muscle as far as the reported cases are concerned. However, it manifests at least one of the attributes of malignancy, that of local invasive properties with local deformity and loss of function. Malignant tumors of the blood vessels are not common, but they have been reported as occurring in the liver, breast, and skin, notably the hemorrhagic sarcoma of Kaposi. Ewing describes a metastasizing hemangioma of the breast.

The following cases have been seen recently in the wards and the clinics of the Charity Hospital:

CASE REPORTS

Case 1. This patient was a white female, 33 years of age, who was admitted to the hospital on August 30, 1937, complaining of a tumor of the left thigh. She dated her illness back to 1932 when she developed a dull pain in the left thigh which was aggravated by walking. Her past history was essentially negative. No history of trauma was elicited. Family history revealed no cancer in the immediate family.

Examination revealed a well developed and nourished white female. The general examination was negative except for the left extremity. On the anterior aspect of the lower third of the left thigh there was a small mass approximately 2 cm. in diameter which was firm and not attached to the skin. There was pain and tenderness on palpation. Roentgen ray examination was negative and showed no phleboliths. The mass was excised and was found to infiltrate the vastus medialis in its distal portion near the junction of the tendon with the muscle. This tumor measured $1\frac{1}{2} \times 1$ cm. and its surface was dark red in color.

The histology revealed that the tumor in the main was composed of large irregular vascular spaces lined by one layer of endothelium and containing red cells. Between these spaces there was rather a dense fibrous stroma in which hemosiderin and extravasated red cells could be seen. A few smaller capillaries were also present. These were lined usually by one layer of endothelium but occasionally several layers could be seen. The muscle fibers showed loss of striations and in some places hyaline change was present.

Case 2. This patient was a well developed and well nourished white male 53 years of age. About January 1937 he became aware of a severe sharp pain in the left forearm below the elbow. The pain persisted for about one week but then subsided leaving a dull ache, especially pronounced on pressure over this area. In March 1937 the patient first noted a swelling in this region. This gradually increased until September 1937 when it measured $10 \times 7 \times 4$ cm. About June 1937 he began to complain of a cramp-like feeling in the first and fourth fingers of the left hand. He soon noted that he could flex these fingers but could not extend them. Attempts at extension of the fingers caused pain in the tumor mass. No history of trauma could be elicited. His father died of carcinoma of the bowel at the age of 63 years.

Examination of the arm showed a soft tumor mass lateral to the upper third of the radius. The mass was not attached to the radius but seemed to be in the soft tissues. When the wrist was extended and no tension put on the extensor muscles the mass was freely movable. There was a slight tenderness on deep pressure over the tumor mass. Roentgen rays revealed no bone pathology but a tumor mass in the soft tissue. No phleboliths were recorded. A needle was inserted into the tumor mass but no blood could be aspirated. In view of the absence of trauma, phleboliths and a negative attempt at aspiration of blood from the tumor, a tentative impression was gained that this was probably a sarcoma arising from the tendons and fascia and progressively involving the extensor muscles of the forearm.

Biopsy revealed a whitish, fairly firm homogeneous tumor mass which seemed to involve the deeper extensor muscles of the forearm. Very little bleeding was encountered in excising this tissue. Microscopic examination revealed that the main part of the tumor was made up of young fibroblastic tissue. Within this tissue could be seen many small vessels lined with a single layer of endothelium. However, more numerous were the small capillaries which were lined by several layers of endothelium some of which were practically occluded by endothelial proliferation. Many of the larger ones contained red blood cells. Here and there fragments of skeletal muscle could be

seen which were undergoing degeneration. In areas of denser fibroblastic stroma, accumulation of fat cells could be seen. In places where the muscle was more intact, the tissue between the muscle fibers was composed of numerous small capillary structures which had a thickened endothelial lining. In certain places the endothelium had gone beyond the confines of the vessel wall and was actively invading muscle fiber with the loss of their striations and replacement by fat and fibrous tissue.

These two cases represent the cavernous and the capillary type of angioma. It is apparent from the course and histology that the second case was more actively invasive and would probably progressively involve extensively in the absence of proper therapeutic procedure.

CONCLUSIONS

1. Angiomas occur rarely primarily in skeletal muscle, constituting approximately 1.7 per cent of all vascular tumors.

2. The muscles of the lower extremity, especially the quadriceps group, seem to be most frequently involved.

3. Trauma is a definite factor in 17 per cent of the cases. A congenital factor may be also operative, as 47 per cent of the cases occurred in the first decade.

4. Cavernous structure is the most common histology. The pure capillary angioma is present in about 3 per cent of the reported cases.

5. The cavernous type has a tendency toward thrombosis and phlebolith formation which can be demonstrated by the roentgen ray in 10 per cent of the cases. The capillary type is more progressively invasive and unless checked may cause marked loss of function and deformity to the extremity. About 6 per cent of the whole group recur after incomplete removal.

6. True malignant angiomas of muscle have not been encountered in the literature, but a small number have at least one of the attributes of malignancy, that of local progressive invasion.

7. Two cases are reported with histologic description. One demonstrates fairly marked invasive properties.

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HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Surgery, Dr. I. Mims Gage, presiding.

Pathology of Carcinoma of the Rectum (Dr. C. W. Duval, Department of Pathology): Carcinoma of the rectum is, as you know, a neoplasm of epithelial character. It arises from the pre-existing epithelial structure of the rectal mucosa. It must be further acknowledged that the mucocutaneous junction of the anal orifice may be the site of origin of new-growths of malignant character. There are three or four distinct varieties of epithelial neoplasm to be considered for this locality. Whether they are derived from the epithelium of the mucosa or the mucocutaneous junction, they are all malignant, malignant in the sense that they are prone to metastasize. It will be of interest to note, I think, that the epithelial neoplasms are relatively slow to metastasize as compared with similar growths observed elsewhere in the body. Just why that is so, I do not know. It is known that the lymphatic drainage is quite extensive and accessible and it is a wonder that there is not a regional lymph node involvement in early carcinoma of the rectum as is so often seen in the regional nodes of other parts of the body that drain sites of malignant proliferation.

Carcinoma constitutes fully 90 per cent, if not more, of the malignancies of the rectum. There are very few mesothelial malignancies. Sarcoma is rare and another type which is rarer still is the lymphoma. The types of carcinoma from a clinical standpoint are several in number. The clinical classification is based largely on the gross appearance of the neoplasm. Histopathologically, certain patterns present themselves; the commonest of all is the glandular type derived from the glandular epithelium of the rectal mucosa. Because it mimics the parent glandular structure it is quite aptly termed adenocarcinoma. Years ago we spoke of benign adenoma of the rectum or bowel but no longer is it considered a benign growth for this region. Even though they are very slow growing and may metastasize only after a period of years, they are potentially malignant from their inception. The next type is the papillary carcinoma characterized by the epithelial element arranging itself, not in a glandular manner, but over stalks of supportive connective tissue which form a protruding polypoid mass into the lumen of the gut. This type as in the case of the adeno-

carcinoma, tends toward rapid unruly proliferation. At the mucocutaneous junction there may be a basal cell carcinoma. That type is, I must say, not of the rectum; it is really just outside the confines of the latter. However, I thought it might be well to mention it at this time. The basal cell carcinoma was formerly called the rodent ulcer. It is notoriously slow to metastasize, if at all. However, this epithelial growth must be included in the malignant group. The last type that I shall mention is the epidermoid carcinoma or squamous cell carcinoma. Pathologists term it the epidermoid carcinoma because its cells tend to differentiate in a manner similar to that seen in the normal epidermis. This type of growth is quite malignant and tends to metastasize early. Its histopathology is characterized by pearl formation as will be demonstrated in the slides to follow.

Before showing the slides to demonstrate both the gross and microscopic appearance of the new growths of the rectum, I would like to call your attention to one or two points. The mucous polyps of the rectum and lower bowel are in appearance and histology much like the polyps so often seen in the nose and other parts of the body. However, due to hyperplastic changes in the epithelial elements they must be considered as potentially malignant in character. They are frequently multiple in occurrence. Because of the naked-eye appearance of certain forms of chronic inflammatory process of this region there is ample opportunity for the surgeon to err in making the differentiation from carcinoma. I recall having seen large segments of the lower bowel and rectum removed for what appeared grossly to be an infiltrative type of carcinoma, only to have closer examination reveal that chronic amebiasis was the pathology at hand. Amebiasis of the lower bowel may be extremely difficult to differentiate from carcinoma by the naked-eye appearance. This is particularly true of the more chronic forms of amebiasis. In addition to the latter there is chronic bacillary dysentery to consider in the differential diagnosis. In the gross the gut wall may be in such condition from the long standing inflammatory and reparative processes that it is very difficult to tell from carcinoma. With syphilis, of course, the lesion is of the condylomatous type readily mistaken for carcinoma. Chancroid disease is another infection which might readily be confused with carcinoma. Lymphogranuloma inguinale is the virus disease that is so much discussed these days. Even though its occurrence is quite characteristic and the diagnostic aids so satisfactorily established, its manifestations in causing stricture of the rectum makes it worthy of consideration in regard to the topic under discussion. Tuberculosis, particularly if the lesions

are ulcerative and situated low down, is worthy of mention in this connection.

Now through the kindness of Dr. Schattenberg, I shall show a few slides that will give the gross and microscopic appearance of the more characteristic malignancies in and about the rectum.

Clinical Manifestations and Diagnosis (Dr. Warren H. Hebert, Department of Surgery): It is true that the diagnosis of carcinoma of the rectum depends upon a history, physical examination which includes a digital examination, and a proctosigmoidoscopic survey.

What are the symptoms associated with a primary early malignancy of the rectum? The early symptoms may be grouped under two classes: (1) Rectal consciousness, and (2) some alteration in the normal bowel habit, with or without a gastrointestinal upset. What is meant by rectal consciousness? This is a rather vague term and includes just such vague sensations that arise from the lower bowel, when there is an associated growth in the incipient stage. The early symptoms that appear may be broadly defined as those associated with a so-called "irritable rectum." At first the discomfort is usually noted when there is stool in the region of the growth. In many cases it is an urgency or frequency, a desire to empty the lower bowel. There may or may not be a successful passage; however, it is usually associated with the discharge of small amounts of gas. At this period there may be some tendency towards a sluggish bowel, but rarely is there true constipation or diarrhea. As the lesion progresses in size, symptoms are no longer dependent on the presence of stool in the region of the lesion. There is a sensation of fullness or heaviness, with a feeling as though the lower bowel is never completely empty. Usually excessive gas necessitates frequent expulsions which may or may not be associated with blood streaked mucus. This necessitates frequent visits to the toilet, and it is this that the individual refers to as diarrhea. In the strict sense of the word, their distress more closely resembles a dysenteric type of disturbance.

What is meant by alteration in the normal bowel habit? This implies just what the term suggests and is more or less self-explanatory. Any persistent alteration of normal bowel habit should warrant a complete investigation of the lower bowel. However, in this day of cathartic abuse, enema habit and self treatment, it is very difficult for an individual to interpret the initial warnings. As a rule they are disregarded and it is not until bleeding occurs, that they realize a more serious condition exists. Nothing has been mentioned about rectal bleeding, rectal pain or diarrhea, for the question was asked, "What are the symptoms of an early lesion of the rectum?"

What information is obtained from a digital ex-

amination? It has been said that in approximately 85 to 95 per cent of rectal growths, it is possible to feel the lesion with the examining finger. This statement is entirely correct, but it is not complete for these figures refer to lesions that are in the markedly advanced stages. There are no statistics obtainable as to the relative efficiency of a digital examination during the early stage of development. If such statistics were obtainable, results as to efficiency in early diagnosis would be surprisingly low. Why do we wait for the lesion to progress to such an extent that it comes to meet the index finger when there are methods available to enable us to identify it in the early stage of development? Such knowledge is obtained from an endoscopic examination. The value of rectal endoscopy cannot be over-emphasized. This procedure affords an opportunity to inspect the gross appearance of the early lesion and at this time a specimen of tissue is removed for microscopic examination. The general characteristics of the growth are determined by its size, extent and location. It is important to determine whether or not one or more walls of the bowel are involved. The degree of obstruction can be more accurately estimated by the size of the lumen in the region of the growth, than by the general clinical history. The degree of mobility and the extent of fixation of the bowel should be accurately estimated. With this information, it is possible for the surgeon to weigh the various factors, and estimate which form of therapy is most adaptable to the individual case.

What is the differential diagnosis of carcinoma of the rectum? In the strict sense of the word there is no differential diagnosis, for any lesion of the rectum that has the characteristics of malignancy is a malignant growth until it is proved otherwise. Should two or three specimens of tissue removed reveal that the tissue is not of a malignant nature, then the growth becomes a benign one. In other words, there is no accurate method of excluding a malignant lesion until a specimen of tissue removed at the time of an endoscopic examination has been reported as non-malignant. Benign and malignant growths so shrewdly masquerade as one another that no accurate diagnosis can be made from a digital or a gross examination alone.

What is the value of a barium enema in the diagnosis of carcinoma of the rectum? Briefly, it has no place whatsoever in the diagnosis of this lesion. Why should we depend upon a contrast method of diagnosis when a direct examination is so readily available?

In conclusion, it is to be said that any consciousness of the rectum, regardless of its nature, should be interpreted as the earliest symptom of a lesion in this particular region. It is true that

a digital examination does disclose the majority of rectal lesions when in the far advanced stage; however, since a direct means of examination is available, these lesions should be noted in the early stage of development. Rectal endoscopy not only affords an opportunity to study the general characteristics of the growth, but it enables a specimen of tissue to be removed for a histopathologic study, which is the only accurate method of establishing a diagnosis.

Roentgen Ray Therapy in Rectal Carcinoma: (Dr. J. N. Ané, Department of Roentgenology): Roentgen ray therapy may be applied to all cases and stages of rectal carcinoma and may be divided into three main types: (1) Irradiation preliminary to surgery, radium, surgical diathermy or a combination of these; (2) radiation following one or more of these procedures; (3) roentgen ray therapy alone. Roentgen ray therapy is never employed alone except for palliation, in those cases in which surgical procedures and the use of radium are impossible.

While the treatment of carcinoma of the rectum may be considered primarily surgical in a number of cases, the operability in a large series of cases when first seen varies from 30 to 50 per cent. In the clinical classification it has been found that Class A cases, in which the lesion is limited to the rectal mucosa, comprise only 15 per cent. Class B cases, with involvement of the muscularis, make up 35 per cent of the total and Class C, with involvement of lymphatics, 50 per cent. In a series of 1,727 cases reported by Rankin, the lesions were considered inoperable in 55 per cent of cases, but in only 35 per cent was resection possible at operation. In some cases in which radical resection is employed, complete removal of all tumor cells is not possible and this is reflected in the number of five-year cures. The highly malignant Grade IV cases frequently have metastasized before the primary lesion has reached any considerable size. External roentgen ray therapy with or without radium therapy is offered as a preoperative procedure to increase the number of five-year cures in selected cases and to obtain greater palliation in others.

Roentgen ray therapy alone would be an ideal method of radiation therapy if it were possible to supply a devitalizing dose to deep-seated tumors. When it is employed preoperatively or preliminary to radium therapy it has been found of definite benefit to the patient. The symptoms are reduced, the patient experiences an increased sense of well-being, and in many cases may gain weight and strength. It thus increases the patient's ability to withstand operation or radium therapy. The effect on the tumor mass is shown by a decrease or disappearance of the area of ulceration with lessening in the degree of infection. Bleeding is in-

variably arrested and there is a decrease in the amount of mucus, which adds to the patient's comfort. The tumor mass becomes smaller and more localized and it is not unusual to have a marked change in movability. When external radiation is employed preliminary to radium therapy the dosage of radium or radon necessary to irradiate effectively the mass is decreased and a smaller dose may be employed. It has been suggested that Grade IV cases should be treated always by external high voltage therapy and followed by the interstitial implantation of radon seeds or the application of radium plaques. While these methods employed alone might be ineffective, the combination of the two in selected cases frequently delivers an effective devitalizing dose to the malignant cells.

The optimal period of time which should be allowed to elapse between radiation and surgery has not been definitely settled. Theoretically surgery should not be performed before the tumor cells have undergone maximum degeneration and inactivity. On the other hand it must be done before cells which have been only slightly damaged become active again. Binkley, of the Memorial Hospital, in selected favorable cases, administers high voltage therapy first. After a period varying from one to six weeks, a colostomy is performed. From one to two weeks later gold radon seeds are implanted, and from seven to fourteen days after the radon, radical resection is performed. Therefore, radical surgery is performed from six to eight weeks after external radiation. Bowing and Fricke, on the other hand, suggest a minimum period of two months, and preferably three months between radiation and surgery. Surgery done within a period of three weeks after radiation is performed in a field, hyperemic and edematous, at the height of the reaction of radiation, in the presence of a frequently ulcerated, infected mass and before the good effects of this therapy can be manifested. Quite frequently, the value of preoperative radiation therapy is grossly underestimated because of early operation.

Postoperative therapy is indicated in those patients in whom it is felt that all of the malignant cells have not been removed. In these patients it is the usual practice, at operation, to employ radon seeds or radium needles in the questionable or known areas of involvement. This should be followed by high voltage roentgen ray therapy with cross-firing of the involved region. Recurrences are as serious as the primary tumor and these may be avoided in a certain group of cases, and in others, prolongation of life with palliation will result, following adequate postoperative therapy.

A large group of rectal carcinoma is made up of the inoperable cases. The rather recent modifica-

tions and improvements in radiation therapy have done much to increase the five-year cure rate and the degree of palliation obtainable in these cases. In properly selected cases, high voltage therapy combined with radium therapy has been found of great value. The plan of treatment in this group of inoperable cases should be carefully selected. Inoperable cases may be divided into three classes. The first class consists of those patients in good physical condition who are able to withstand an intensive radium and roentgen ray reaction. This therapy results in disappearance in activity of the tumor or a marked lessening of symptoms. The second class comprises those patients in fair condition with a large tumor and mild infection. These patients should have repeated moderate roentgen ray and radium therapy and it is thus possible to keep them relatively comfortable for a period of from one to two years. The third class is made up of those unfortunate individuals in very poor physical condition associated with rather severe infection of the tumor area. It is in this group that over-radiation is to be carefully avoided for while slight prolongation of life might result, the discomfort and increase in symptoms produced by intensive radiation seldom compensate for the slight extension of life. Thus, in approximately 50 per cent of inoperable cases, radium therapy may be impossible because of the condition of the patient or because of the location of the tumor, and external radiation by high voltage therapy will remain as the only procedure for palliation.

The technic of high voltage radiation therapy must be carefully selected for the individual case, and depends upon the condition of the patient, the operability and type of tumor, and the future plans of therapy to be followed. In the average case, three anterior, three posterior, and one perineal field are employed and from 600 to 1,000 R. are used over each field.

In the selection of technic for external radiation the lymphatic drainage and routes of spread of the tumor must be carefully considered. The lymphatics of the rectum pass to the rectal glands which lie in the muscular coat, next to the glands back of the rectum along the superior hemorrhoidal artery, and finally pass to the sacral and other pelvic glands. A lesion around the anus being epithelial drains through the superficial lymphatics of the skin, and those in the rectal canal through the pelvic lymphatics. Unless the upper lymphatics are blocked, there is very rarely any drainage downward.

Of the greatest importance in the treatment of rectal carcinoma are the proper selection of the methods of treatment available for the individual case and the close cooperation of the pathologist, surgeon, physicist and radiologist.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

- November 1 Board of Directors, Orleans Parish Medical Society, 8 p. m.
- November 1 Pathologic Conference, Hotel Dieu, 8:15 p. m.
- November 2 Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.
- November 3 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- November 3 Hutchinson Memorial Clinic Staff, 8 p. m.
- November 3 Mercy Hospital Staff, 8 p. m.
- November 8 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- November 10 Touro Infirmary Staff, 8 p. m.
- November 12 French Hospital Staff, 8 p. m.
- November 15 Hotel Dieu Staff, 8 p. m.
- November 16 Charity Hospital Medical Staff, 8 p. m.
- November 17 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- November 17 Charity Hospital Surgical Staff, 8 p. m.
- November 18 Eye, Ear, Nose and Throat Club, 8 p. m.
- November 19 I. C. R. R. Hospital Staff, 12 Noon.
- November 22 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m. Election of delegates to the Louisiana State Medical Society and nomination of officers, 1938.
- November 23 Baptist Hospital Staff, 8 p. m.
- November 24 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of October the Society held two meetings. On Monday, October 11, the following program was presented:

The Relation of the Medical Social Worker to the Physician.

By: Miss Beatrice Hodge, Director Social Service Department, Charity Hospital of New Orleans.

Some Phases of the Social Security Act.

By: Dr. Elizabeth Wisner, Dean, School of Social Work, Tulane University.

The State Hospital and Welfare Boards.

By: Mr. A. R. Johnson, Director, State Department of Public Welfare and Hospitals.

The Organization and Operation of the New Orleans Department of Public Welfare.

By: Mr. Richard Foster, Director, New Orleans Department of Public Welfare.

The Federal and State Programs of Maternal and Child Welfare.

By: Dr. R. W. Todd, Director, Bureau of Parish Health Administration.

The Relation of Preventive Medicine to the Federal and State Welfare Program.

By: Dr. W. H. Perkins, Professor of Preventive Medicine and Head of the Department, Tulane University.

Owing to the illness of Mr. Johnson, Dr. O. P. Daly read his paper.

This meeting was very well attended by members and guests.

The meeting held October 25 was under the auspices of the New Orleans Gynecological and Obstetrical Society. The following papers were presented:

1. History of Cesarian Section by Dr. Joseph W. Reddoch.
2. Causes from Anatomical Standpoint by Dr. H. Cummings.
3. Indications for Cesarian by Dr. Walter E. Levy.
4. Contraindications for Cesarian by Dr. M. Lyon Stadiem.
5. Choice of Operation by Dr. Peter Graffagnino.
6. Low Cervical Section by Dr. John F. Dicks.
7. Classical Section by Dr. Philips J. Carter.
8. Motion Picture by Dr. George A. Mayer.
9. Pre-and Postoperative Care and Complications by Dr. Conrad G. Collins.
10. Anaesthesia in Cesarian Section by Dr. Ansel Caine.
11. Statistical Study Over Ten Year Period by Dr. Edward L. King.
12. Summary by Dr. Hilliard E. Miller.

NEWS ITEMS

Dr. Leon J. Menville was elected Vice-President of the American College of Radiology at the recent meeting held in Chicago.

Dr. Maud Loeber was elected President of the Diocesan Council of Catholic Women at its organization meeting held August 8, 1937.

Dr. Edward L. King and Dr. Thomas B. Sellers attended the meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons held at Hot Springs, Virginia.

Drs. W. Rogers Brewster and Elizabeth Lewis were recently appointed medical inspectors of the Orleans Parish School Board.

Dr. Julian Graubarth attended the recent session of the Association of School Physicians held in New York City.

Dr. Emile Naef addressed the Medical Section of the Southern Tuberculosis Conference and the Southern Sanatorium Association, which met in Richmond, Virginia, September 29 through October 1. The subject of Dr. Naef's paper was "Childhood Tuberculosis."

Dr. Robert A. Strong was a guest speaker in pediatrics before the Kansas City Southwest Clinical Society, which held its meeting in Kansas City on October 4-7. Dr. Strong addressed the open meeting to the public on "Preventive Pediatrics" and in addition gave several talks on pediatric subjects on the programs which followed during the ensuing days.

Dr. John H. Musser attended the meeting of the American Climatological and Clinical Association in Baltimore on October 11, 12, and 13, where he read a paper entitled "Deficiency Disorders as Observed in the Far South." Dr. Musser was elected Vice-President for the coming year.

Dr. Charles S. Holbrook was chosen President-Elect of the Southern Psychiatric Association at the third annual convention of the organization, held recently in San Antonio, Texas.

Dr. Walter J. Otis addressed the convention of the Southern Psychiatric Association on "Childhood's Early Symptoms of Mental Disease."

The following doctors from the Society attended the meeting of the Central Association of Obstetricians and Gynecologists, held in Dallas, Texas, October 14, 15, and 16: Drs. H. B. Alsobrook, Philips J. Carter, Peter Graffagnine, M. M. Hattaway, Adolph Jacobs, Wm. D. Phillips, Joseph W. Reddoch, Thomas B. Sellers, and H. Vernon Sims.

Dr. Alton Ochsner attended the meeting of the Interstate Postgraduate Medical Assembly, which was held in St. Louis, Missouri, from October 18 to 22. On Tuesday, October 19, he addressed the assembly on "Pitfalls in the Diagnosis of Acute Abdominal Conditions."

Dr. Ochsner also attended the Clinical Congress of the American College of Surgeons, which was held in Chicago from October 25 to 29. At this meeting Dr. Ochsner presented a paper on "The Tragedy of Accidents", and also took part in the Conference on Graduate Training for Surgery, giving a general presentation of the subject. Dr. Ochsner is a member of the Board of Regents of the College and attended the meetings of that Board while in Chicago.

Other members of the Department of Surgery who attended the meeting of the American College

of Surgeons in Chicago were Drs. Ambrose H. Storck and Michael E. DeBakey.

Dr. C. C. Bass, Dean of the Tulane University School of Medicine, attended the annual meeting of the Association of American Medical Colleges in San Francisco, October 25, 26, and 27.

Dr. Manuel Garcia, for the past four years associated with the J. T. Nix Clinic, has received an appointment as assistant resident at the Cancer Memorial Hospital of New York, the appointment to become effective on January 1, 1938.

Dr. Earl Conway Smith, representing the New Orleans Graduate Medical Assembly, addressed the East Mississippi Medical Society in Meridian, Mississippi, on October 14. The title of subject presented was "Medical Treatment of Pelvic Inflammatory Diseases of Women, with Special Reference to the Use of the Elliot Treatment Regulator."

The Faculty Club of Louisiana State University Medical Center held its first meeting for the Session 1937-1938 on Friday, October 29, at 8 p. m. The following program was presented:

1. Application of the Solid Angle and the Magnetic Shell to the Analysis of the Precordial Lead: By Drs. R. H. Bayley and J. L. Gouaux.

2. The Diagnosis of Placenta Previa by Means of the Roentgen Ray, with illustrations: By Drs. P. J. Carter and C. P. Cabibi.

3. A Study of the Cause of Death from Lung Abscess: By Drs. James D. Rives and Louis A. Monte.

REMOVALS

Dr. James J. Baron from 1012 to 1101 Maison Blanche Bldg.

Dr. Arthur Caire from 3439 Prytania Street to 1415 Delachaise Street.

Dr. Arthur Caire, Jr. from 3439 Prytania Street to 1415 Delachaise Street.

Dr. Sidney M. Copland from 3439 Prytania Street to 1415 Delachaise Street.

Dr. B. J. DeLaurel from 3503 Prytania Street to Hebert Bldg., 3445 Prytania St.

Dr. Edmond L. Faust from 502 Medical Arts Bldg. to Hebert Bldg., 3445 Prytania St.

Dr. Frederick L. Fenno from 220 Physicians & Surgeons Bldg. to Hebert Bldg., 3445 Prytania St.

Dr. Caroline Mims from 1002 to 903 Pere Marquette Bldg.

Dr. Alberto Prieto from 502 Medical Arts Bldg. to Hebert Bldg., 3445 Prytania Street.

Dr. H. R. Unsworth from 503 Legendre Bldg. to 819 Maison Blanche Bldg.

Dr. Charles T. Williams from 3439 Prytania Street to 1415 Delachaise St.

The following doctors were elected to membership:

Active: Drs. Richard L. Buck and Lang F. Holland.

Associate: Dr. Esdras J. Lanois.

TREASURER'S REPORT

Actual Book Balance: 8/31/37	\$3,115.36
September Credits	\$ 190.19
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Total Credits:	\$3,305.55
Expenditures:	\$ 414.53
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Actual Book Balance: 9/30/37:	\$2,891.02

LIBRARIAN'S REPORT

The Library has loaned to doctors, during July and August, 1192 books and journals, or more than two to each member of the Society. An additional 435 have been loaned to students, making a total of 1645 for the two months. It is interesting to note that during the vacation months of July—September 2,321 books and journals were loaned to doctors and students; this is an increase of about 100 over the same period for 1936. These figures do not include the great use of books and journals within the Reading Rooms.

Members of the staff have collected material on the following subjects during the period from July—September:

Chemistry of dyes
 Immediate pre-and postoperative care
 Embolectomy
 Arteriography
 Menopause
 Family attitude toward the chronically diseased
 Neoplasms of bone
 Resections on mandible
 Hermaphroditism
 Postoperative pulmonary complications
 Solitary tuberculous abscess of the liver
 Malignancy of the uterus in the young
 Regional ileitis
 Fissure of anus
 Bursitis of olecranon
 Tic douloureux—technic of treatment
 Relation of hormones and vitamins
 Technic of the Rubin test
 Hyperinsulinism
 Insulin in the treatment of dementia praecox

Prostigmin in myasthenia gravis
 Fecal fistula
 Magnesia
 Benign strictures of rectum
 Proctitis

During August and September 139 volumes were added to the Library. Of these 75 were received by gift, 38 by binding and 26 from the New Orleans Medical and Surgical Journal. Notation of new books of recent date is given below.

Beginning with October 1, the Library has resumed its evening hours of opening, 7-11 on Monday through Friday of each week.

NEW BOOKS

August-September

Majocchi, Andrea—Life and Death. 1937.
 Bogert, L. J.—Dietetics Simplified. 1937.
 Shryock, R. H.—Development of Modern Medicine. 1936.
 Appel, K. E.—Practical Examination of Personality and Behavior Disorders. 1936.
 Warbasse, J. P.—Surgical Treatment. 4 v. 1937.
 American Foundation—American Medicine. 2 v. 1937.
 Tuft, Louis—Clinical Allergy. 1937.
 Kurzrok, Raphael—Endocrines in Obstetrics and Gynecology. 1937.
 Morton, R. S.—A Woman Surgeon. 1937.
 Saphir, Otto—Autopsy Diagnosis and Technique. 1937.
 Muir, Robert—Textbook of Pathology. 1936.
 Sinclair, J. G.—Anatomy of the Fetal Pig. 1936.
 Cannon, W. B.—Autonomic Neuro-Effector Systems. 1937.
 Lord, E. E.—Children Handicapped by Cerebral Palsy. 1939.
 Barnes, T. C.—Textbook of General Physiology. 1937.
 Fisher, W. A.—Ophthalmology, Retinoscopy and Refraction. 1937.
 Wilson, D. W.—Laboratory Manual of Physiological Chemistry. 1937.
 Cunningham, Eileen—Classification of Medical Literature. 1937.
 Kantor, J. L.—Synopsis of Digestive Diseases. 1937.
 Barnes, T. C.—Laboratory Manual of General Physiology. 1937.
 Warner, A. A.—Endocrinology. 1937.
 U. S. Pharmacopoeial Convention—U. S. Pharmacopoeia. 1937.

LOUISIANA STATE MEDICAL SOCIETY NEWS

THE SOUTHERN MEDICAL ASSOCIATION
PROGRAM

Tuesday, November 30, 9:00 a. m. Registration, Municipal Auditorium. This has been designated as New Orleans Day. The Program Committee, of which Dr. Frederick L. Fenno is chairman, has arranged for the holding of two medical sections and one surgical section in the morning and in the afternoon; also an Eye, Ear, Nose and Throat Section in the morning and a Gynecological and Obstetrical Section in the afternoon. The program will be presented entirely by physicians of New Orleans. There will be no discussion.

Tuesday, 8 p. m. Public Meeting, Municipal Auditorium. Music furnished by the Loyola University Band.

Wednesday, December 1, 9:00 a. m. to 5:00 p. m. Scientific sessions, Municipal Auditorium.

Wednesday, 8 p. m. Ball Room, Roosevelt Hotel, President's Meeting followed by President's Reception at 9:30 p. m. in the Ball Room of the St. Charles Hotel.

Thursday, December 2, 9:00 a. m. to 5:00 p. m. Scientific Sessions. 12:30 p. m. Fraternity luncheons; places to be designated at the time of registration. 6:30 p. m. Alumni dinners and reunions; places to be designated at the time of registration. A local doctor has been appointed to take care of the plans of each university reunion dinner.

Friday, December 3, 9:00 a. m. to 5:00 p. m. Scientific Sessions, Municipal Auditorium. Golf Tournament. Arrangements have been made for tournament playing throughout the meeting for trophies played for each year by the Southern Medical Association and for prizes awarded by the local committee of which Dr. Lucien A. Fortier is Chairman.

WOMAN'S AUXILIARY

Mrs. George J. Taquino, Chairman, Ladies' Entertainment Committee, announces the following program:

Tuesday, 9 a. m.—Registration, Roosevelt Hotel, headquarters for all women's activities.

Wednesday, 10 a. m. First meeting of the Woman's Auxiliary, Southern Medical Association, Mrs. Frank N. Haggard, President, presiding. 12:30 p. m. luncheon in the Vieux Carré followed by a specially directed tour with guides through the French Quarter. 5 p. m. refreshments at Madame Johns' Legacy in the Vieux Carré.

Wednesday, 8 p. m. President's meeting, Ball Room, Roosevelt Hotel. 9:30 p. m. President's Reception and Ball in the Ball Room of the St. Charles Hotel.

Thursday, 9 a. m. Meeting of the Woman's

Auxiliary. 9 a. m. Women's golf tournament at the Metairie Golf Club; 12:30 p. m. Roosevelt Hotel, Southern Medical Auxiliary Luncheon, Mrs. Frank N. Haggard, President, presiding; 2:30 p. m. Automobile tour of the city including Lake Shore Drive and Shushan Air Port with a short visit to the old colonial homes on the return trip.

Thursday, 8 to 10 p. m. Entertainment, Roosevelt Hotel.

Friday, 9 a. m. Harbor trip on the Yacht "Louisiana" starting from Ead's Plaza.

Lucien A. Ledoux, M. D.,
General Chairman
Committee of Arrangements.

CHAIRMEN AND COMMITTEES
OF ARRANGEMENTS

General Chairman: Dr. Lucien A. LeDoux.

Vice General Chairmen: Drs. Emmett L. Irwin, Leon J. Menville and Urban Maes.

Secretary: Dr. John J. Archinard.

Honorary Vice-Chairmen: Drs. C. C. Bass, J. M. Batchelor, Geo. S. Bel, Rigney D'Aunoy, Frank Gcmila, Charles Horton, Hiram W. Kostmayer, Rudolph Matas, James T. Nix and Joseph A. O'Hara.

Alumni Reunions and Fraternity Luncheons: Dr. Oscar W. Bethea, Chairman; Dr. Wm. B. Clark, Wm. D. Phillips, Robert A. Robinson and P. B. Salatick.

Entertainment: Dr. Val H. Fuchs, Chairman; Drs. A. E. Fossier, Jerome E. Landry, Walter J. Otis and George J. Taquino.

Finance: Dr. Louis Levy, Chairman; Drs. Frank J. Chalaron, L. C. Chamberlain, Robert L. Gordon, Francis E. LeJeune and Walter E. Levy.

Fishing: Dr. Cassius L. Peacock, Chairman; Drs. F. Temple Brown, Allan Eustis, Geo. H. Hauser and J. Kelly Stone.

Golf: Dr. Lucien A. Fortier, Chairman; Drs. Charles A. Bahn, Edgar Burns, Morell W. Miller, and Robert M. Willoughby.

Hotels: Dr. M. T. Van Studdiford, Chairman; Drs. E. E. Allgeyer, John J. Irwin, Joseph C. Menendez and M. L. Stadiem.

Information: Dr. Randolph Unsworth, Chairman; Drs. H. E. Bernadas, Frank Chetta, R. A. Oriol and Wm. H. Seemann.

Lanterns and Screens: Dr. John Signorelli, Chairman; Drs. Gilbert C. Anderson, C. E. Gorman, Daniel J. Murphy and H. V. Sims.

Membership: Dr. William A. Wagner, Chairman; Drs. Robert Bernhard, S. M. Blackshear, C. Grenes Cole and Henry A. Macheca.

Program and Clinics: Dr. Frederick L. Fenno, Chairman; with the President, Dr. James T. Nix and the General Chairman, Dr. Lucien A. LeDoux.

Publicity: Dr. James D. Rives, Chairman; Drs. Amédée Granger, Waldemar R. Metz, P. T. Talbot, and Roy W. Wright.

Scientific Exhibits: Dr. Shirley C. Lyons, Chairman; Drs. Donovan C. Browne, John Couret, Marcy J. Lyons, and Neal Owens.

Technical Exhibits: Dr. H. Theodore Simon, Chairman; Drs. Wilmer Baker, L. L. Cazenavette, George D. Feldner, and Edmond Souchon.

Transportation: Dr. Daniel N. Silverman, Chairman; Drs. Philips J. Carter, Alex R. Crebbin, Roy E. de la Houssaye, and M. O. Miller.

Trap Shooting: Dr. Chaille Jamison, Chairman; Drs. C. L. Peacock, Rawley M. Penick, Jr., John G. Pratt, and Robert A. Strong.

Women's Physicians: Dr. Ruth G. Aleman, Chairman.

LADIES' ENTERTAINMENT COMMITTEE

General Chairman: Mrs. George J. Taquino.

Vice General Chairmen: Mrs. Isidore Cohn and Mrs. H. Vernon Sims.

Hostess Committee: Mrs. Lucien Alexander, Chairman; Mrs. J. T. Nix and Mrs. J. B. Larose, Vice-Chairmen; Mesdames H. B. Alsobrook, Gilbert C. Anderson, G. D. Feldner, C. L. Brown, D. C. Browne, J. E. Brierre, W. R. Buffington, W. R. Brewster, H. E. Bernadas, A. R. Crebbin, Frank Chetta, F. J. Chalaron, Ralph Christman, P. Grafagnino, Chas. Hume, W. C. Hava, Wm. H. Harris, Wm. Kohlmann, F. J. Kinberger, R. C. Lynch, M. G. Lynch, Walter E. Levy, E. L. Leckert, D. J. Murphy, R. J. Mailhes, Louis Ochs, H. W. E. Walther, J. C. Menendez, P. A. Phillips, P. B. Salatich, J. P. Wahl, J. W. Warren, Arthur Vidrine, E. B. Vickery.

Registration Committee: Mrs. Frederick L. Fenno, Chairman; Mrs. Lucien A. LeDoux, Mrs. J. E. Landry and Mrs. E. E. Allgeyer, Vice-Chairmen; Mesdames W. P. Gardiner, A. F. Hebert, John S. Dunn, H. Theodore Simon, M. F. Meyer, T. T. Gately, A. I. Weil, Jack Strange, Ansel Caine, H. N. Blum, Shirley C. Lyons and A. Mogabgab.

Transportation Committee: Mrs. H. L. Weinberger, Chairman; Mrs. E. S. Hatch, Vice-Chairman; Mesdames J. R. Hume, Howard Mahorner, S. J. Rosenthal, Chas. Odcm, Paul G. Lacroix, Jos. D'Antoni, Val H. Fuchs, Louis Levy and Geo. H. Hauser.

Luncheons Committee: Mrs. Chaille Jamison, Chairman; Mrs. R. E. Stone, Vice-Chairman; Mesdames S. M. Blackshear, Edgar Burns, J. H. Musser and H. W. Kotsmayer.

Decorations Committee: Mrs. L. J. Menville, Chairman; Mrs. P. J. Kahle, Vice-Chairman; Mesdames A. L. Levin, J. K. Stone, C. Grenes Cole and D. N. Silverman.

Vieux Carré Committee: Mrs. I. I. Lemann, Chairman; Mrs. P. C. DeVerges, Vice-Chairman;

Mesdames Randolph Lyons, E. L. Faust, John Oechsner and S. S. Grosjean.

Colonial Homes Tour: Mrs. W. H. Seemann, Chairman; Mrs. Robert Bernhard, Vice-Chairman; Mesdames Roy E. de la Houssaye, Willard R. Wirth and Marcus Feingold.

Evenings' Entertainment: Mrs. Ralph Hopkins, Chairman; Mrs. J. Pratt, Vice-Chairman; Mesdames Chas. J. Bloom and John Smyth.

Refreshments Committee: Mrs. C. L. Peacock, Chairman; Mrs. A. J. Hockett, Vice-Chairman; Mesdames C. C. Bass, John F. Oakley and J. Ane.

Golf Committee: Mrs. Amédée Granger, Chairman; Mrs. A. D. Mouledous, Vice-Chairman; Mesdames Edwin L. Zander, R. C. Voss and Marion Souchon.

Publicity Committee: Mrs. Edwin R. Guidry, Chairman; Mrs. M. Bradburn, Vice-Chairman; Mesdames J. A. O'Hara and Carl Granberry.

AN INVITATION

To the Profession of Louisiana: Greetings!

This is to appeal to you for your cooperation by soliciting your application for membership in the great Southern Medical Association, which will meet in New Orleans this fall.

Briefly, these are the advantages: By joining now you will be entitled to membership which runs through the meeting time and until end of next year; you will be joining the next to the largest organization of medical men in America and one which is devoted especially to problems of interest to the profession in the South; you will receive a Journal which is up-to-date and full of live topics (papers read at previous meetings and other matters) which alone is worth more than the price of membership. The dues, including the Journal, are only \$4.00 per year and I know of no way in which you can better invest \$4.00 for the improvement of yourself and for the good of your profession.

Trusting to have your prompt cooperation and anticipating the pleasure of greeting you in New Orleans on November 30 next, I am

Cordially and fraternally yours,

Arthur A. Herold, M. D.,

Councilor for Louisiana.

TRI-STATE MEDICAL SOCIETY

The Tri-State Medical Society met in two day session in Shreveport, October 27 and 28. A splendid program was provided for the large attendance, probably the most outstanding presentation being that of Surgeon-General Parran of the United States Public Health Service, who talked on his favorite subject, prevention of syphilis.

TRI-PARISH MEDICAL SOCIETY

The Tri-Parish Medical Society had its regular

meeting at Tallulah on October fifth. The following members were present: Drs. J. P. Davis, W. K. Evans, G. S. Hopkins, P. S. Parrino and William H. Hamley from East Carroll Parish; D. W. Kelly, B. L. Bailey and E. D. Butler from West Carroll Parish; G. W. Gaines, E. O. Edgerton, A. T. Palmer, D. H. Allen, Jr., O. H. Armstrong, L. Stevens, H. S. Provine, W. P. Yerger from Madison Parish; Joseph Whitaker, T. G. Ward, Donovan Davis and B. G. Moss from Tensas Parish. Drs. C. D. Powell, Franklin Parish, E. L. Sanderson and H. G. F. Edwards, Shreveport, and J. B. Vaughan and A. Scott Hamilton, Monroe, were guests of the society.

The first paper, entitled "Cancer Is Curable," was presented by Dr. Edwards and was illustrated with lantern slides. Dr. Sanderson, who is superintendent of the Shreveport Charity Hospital, read a paper on "Treatment of Indigent Patients in the Future".

Drs. T. G. Ward and O. H. Armstrong were elected to active membership. A resolution from the Shreveport Medical Society was read and adopted, and a copy sent to the secretary of the Louisiana State Medical Society.

William H. Hamley, M. D., Sec.

THE BI-PARISH MEDICAL SOCIETY

The members of the Bi-Parish Medical Society met as guests of Dr. and Mrs. S. L. Shaw in their log cabin lodge on October 6, 1937. The following members and guests were present: Drs. Jones, Irwin, Ayo, Miller, Pargen, Roberts, Shaw, Toler, Staff, and Long; Mesdames Ayo, Pargen, Roberts, Toler, Miller, Shaw and Miss Tate.

Scientific program consisted of an excellent paper by Dr. Tom Spec Jones of Baton Rouge, on "Typhus Fever." Dr. Jones' paper was freely and favorably discussed by physicians present.

A vote of thanks was extended Dr. and Mrs. Shaw for their superb entertainment and dinner.

The society adjourned to meet in December in the Rist Hotel, Clinton, Louisiana.

E. M. Toler, M. D., Sec.

ST. TAMMANY PARISH MEDICAL SOCIETY

The St. Tammany Parish Medical Society met October 1, at the Southern Hotel, Covington, in regular communication. The business of the Society was quickly attended to, and the real feature of the meeting followed, which was to do honor to our Congressman, Dr. John K. Griffith. In fact, the meeting had been designated as "Griffith Night". Among the prominent visitors present were Dr. L. L. Ricks, Coroner, Tangipahoa Parish; Dr. L. C. Del Torio, C. C. Camp Physician; Hon. Jas. Burns, District Attorney; Hon. Vic Planche, Representative in the Legislature from this parish.

Before turning the meeting over to Dr. Griffith, radio facilities having been provided, Chief Justice Black's address was heard. Dr. Griffith was then presented and he gave us a very interesting talk on his experiences and observations while serving his "freshman" course in Congress.

The next meeting will be in Slidell in December.

H. D. Bulloch, M. D., Sec.

ATTENTION PARISH SECRETARIES

Please cooperate by answering communications. Historical data of your parish are an important part of the history of the state society. Do not fail your parish.

Despite continual effort to obtain historical data from the parishes for ten years regarding especially early settlers and portraits of officers of 1929, needed to satisfy the requirements of our work, much material is still lacking, we regret to say, through lack of cooperation of many secretaries or members in parishes to whom we have appealed for data. This work is intended entirely for the benefit of the profession of the state, but we are much delayed in our progress because of the failure of many secretaries or other members of parish societies to whom we have addressed repeated communications to respond to our inquiries.

R. Matas, M. D., Chairman,
Committee on History of L. S. M. S.

NEWS ITEMS

At a meeting of the American College of Radiology, which met at the same time as the Fifth International Congress of Radiology in Chicago, Dr. Leon J. Menville was elected its Vice-President. Dr. Menville participated in a radio broadcast sponsored by the Congress and spoke on a radiological subject.

There is an opening for a physician at Epps, Louisiana, with possibilities for a good country and village practice. Persons interested may contact Dr. B. L. Bailey at Epps, either personally or by letter.

The Southeastern Branch Society of the American Urological Association will meet at the Tutwiler Hotel in Birmingham, November 5 and 6, 1937. Dr. Edgar Burns is on the Executive Committee and information concerning the meeting may be obtained from him. On a program of nine papers, one of them will be presented by Drs. Henry W. E. Walther and Robert M. Willoughby, of New Orleans, and is entitled "Hormonal Treatment of Benign Prostatic Hypertrophy."

The annual scientific meeting of the Georgia Pediatric Society will be held in Atlanta on

Thursday, December 9, 1937. Among the guest speakers will be Dr. Ralph S. Muckenfuss, Director of the Department of Health, Bureau of Laboratories, New York City; Dr. Priscilla White, attending Physician, Deaconess Hospital, Boston; Dr. Joseph Brennemann, Professor of Pediatrics, University of Chicago, and Chief of Staff, Childrens' Memorial Hospital, Chicago.

Roger W. Dickson, M. D., Pres.
Georgia Pediatric Society.

One of the outstanding figures in medicine, although not a doctor, died October 15, 1937. Mr. Henry Kendall Mulford, was the founder and builder of Mulford's biological house. He was the first to distribute commercially antitoxins; he was active in the effective preparation of curative serums and vaccines. Mr. Mulford was widely honored during his career. His high standard of ethics, his willingness to cooperate with physicians made him one of the great men in medicine.

COMMUNITY CHEST CAMPAIGN

The fourteenth annual Community Chest campaign extends from November 9-30. Physicians should be very much interested in this campaign to raise money and do all they can to help, because a very goodly proportion of the agencies participating in the Chest appeal are hospitals and organizations which have to do with the health of the community. The doctor should and probably can do more through individual aid than any other: He can encourage his patients and friends to give to a worthy cause.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information. For the week ending September 18, syphilis led all reported diseases by a wide margin, 150 cases being listed, followed by these diseases which were sufficiently frequent to appear in double figures: 87 cases of hookworm, 55 of pulmonary tuberculosis, 25 each of cancer and malaria, 22 of gonorrhea, 21 of pneumonia and 17 of typhoid fever. During this week, sad to relate, there were reported eight cases of poliomyelitis in eight parishes of the state. One case of typhus fever was reported from Orleans and one case of undulant fever from Rapides Parish. For the week which came to a close on September 25, syphilis again came to the forefront with 135 cases, followed by 39 cases of pneumonia, 35 of malaria, 33 of pulmonary tuberculosis, 27 of gonorrhea, 26 of cancer, 25 of typhoid fever and 13 of diphtheria. The typhoid fever cases were scattered quite well throughout the state; no more than

three cases were listed from any one parish except Richland, which had four. During this week, there were five cases of poliomyelitis reported from five different parishes; two cases of typhus fever were reported from Beauregard and one from Rapides Parish. For the thirty-ninth week of the year, ending October 2, syphilis jumped up with 260 cases reported, followed by 39 each of pulmonary tuberculosis and malaria, 30 of gonorrhea, 27 of cancer, 20 of pneumonia, 17 of typhoid fever and 14 of diphtheria. Only three cases of poliomyelitis were reported this week, one each from Bienville, Orleans and Union Parishes. The Orleans Parish case was imported. There was one instance of typhus fever in East Baton Rouge Parish and one of undulant fever in Caddo. For the week closing October 9, syphilis again was approximately five times more frequent than any other disease, 250 cases being reported; this was followed by 45 cases of malaria, 36 of pulmonary tuberculosis, 32 of cancer, 28 of pneumonia, 19 of gonorrhea and 11 of typhoid fever. Of the four cases of poliomyelitis reported this week, all came from Orleans, but one case was imported. For the week ending October 16, there was quite a fall in the number of cases of syphilis, 141 instances, followed by 56 of malaria, 50 of hookworm, 48 of pulmonary tuberculosis, 26 of gonorrhea, 23 each of diphtheria and pneumonia, 22 of cancer and 10 each of influenza and whooping cough. Only one case of poliomyelitis was reported this week, most gratifying. It is also a pleasure to report that for the past five weeks diphtheria has been below the average; undoubtedly, this is due to the efforts of physicians to immunize children against the disease. Of the more unusual diseases a case of typhus fever was reported from East Baton Rouge Parish, and one from East Feliciana Parish. A case of lethargica encephalitis was reported from Orleans Parish.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending September 11, there was a considerable drop in the number of deaths in New Orleans, there being 45 less than the previous week. These were divided 81 in the white and 44 in the negro population. There were 14 deaths this week in infants under one year of age. There was a slight decrease in the death rate for the following week, ending September 18, 120 deaths equally divided between the two races. The infant death rate was reasonably small, 12 deaths being reported. For the week closing September 25, 131 deaths were listed of which 75 were white and 56 negro; 11 were in children who had not yet attained the age of one year. The total number of deaths, namely 153, for the week ending October 2, was slightly below the aver-

age for the corresponding week. These deaths took place in the following numbers, 97 in the white and 56 in the negro race. Sixteen deaths were in infants. It is pleasant to note that for the week which came to a close October 9, there were 22 less deaths than for the preceding week, there being 131, segregated 83 white and 48 negro, with 11 deaths in small children.

THE NORTH MISSISSIPPI COMMUNITY HOSPITAL

The opening of the North Mississippi Community Hospital at Tupelo, Mississippi, on October 3, gives the northeastern part of this state a modern, fireproof, well-equipped 50-bed hospital held in trust for the public, open to all qualified physicians and designed to serve the sick without discrimination.

This is the eighth such hospital to be built with the aid of the Commonwealth Fund of New York, which is now undertaking to provide one new hospital each year for a predominantly rural community which will agree to meet its share of costs and to run the institution in accordance with generally accepted standards. The ninth in the group is now under construction at Ada, Oklahoma, and the tenth has been awarded to the community centering in Provo, Utah.

The Fund began this project in 1926 as an experiment in meeting the need of rural communities for better medical and other health services. It was known that adequate hospital facilities were lacking in many rural districts, that recent graduates from medical schools were not entering rural practice in proportion to local needs, and that in spite of substantial progress in some parts of the country, health services in rural areas were not so well developed as those usually found in cities. It was assumed that the presence of well planned and well conducted hospitals would to some degree correct this situation, and experience in half a dozen different states indicates that the hope was justified.

The present plan is to aid in establishing hospitals having a capacity of between 25 and 50 beds and easily accessible to a rural community having a population large enough to make good use of such accommodations and capable of meeting operating costs. The hospital may either be a totally new institution, or may replace existing facilities which are clearly inadequate. The Fund furnishes plans, specifications, and architectural supervision for the construction, and not less than \$200,000 as a contribution toward capital costs. It advises in the organization of the hospital corporation and the medical staff, offers assistance in meeting the administrative problems of the early years and provides a number of fellowships for

postgraduate study by members of the medical staff.

Communities needing a 50-bed hospital are required to raise from \$40,000 to \$60,000 for their share of the capital cost and must provide in addition a site (with service connections) and from \$10,000 to \$15,000 to meet the deficit of the first year's operation. Ownership and administrative responsibility are lodged in a local corporation, organized not for profit, which contracts with the Fund to operate the hospital in agreement with specified standards. These standards are such as to guarantee its integrity as a community institution and to justify its approval by the American College of Surgeons.

Hospitals founded under this program are now operating in Murfreesboro, Tennessee; Farmville, Virginia; Glasgow, Kentucky; Farmington, Maine; Wauseon, Ohio; Beloit, Kansas, and Kingsport, Tennessee.

ALVARENGA PRIZE COMPETITION

The Premio Alvarenga do Piauhy (Brazil) Prize for 1938, about \$200, will be conferred by the College of Physicians of Philadelphia on July 14, 1938 "upon the author of the best memorial or unpublished work on any branch of medicine which may be deemed worthy of the prize." The study will be selected either from among contributions published since January 1, 1937 and brought to the attention of the committee before May 1, 1938, by the author or by other sponsors, or from among unpublished studies submitted to the committee in typewritten manuscript and received before May first. Address communications to: The Alvarenga Prize Committee, 19 South Twenty-second Street, Philadelphia, Pa., U. S. A.

NINTH GORGAS MEMORIAL ESSAY CONTEST

Announcement of the Ninth Gorgas Memorial Essay Contest has been made by Admiral Cary T. Grayson, Chairman of the Board of Directors of the Gorgas Memorial Institute, from the office of the institute at 1835 Eye Street, Northwest, Washington, D. C. The essay contests have become an annual feature of the program of personal health education carried on by the institute. High schools throughout the country are invited to enroll. Participation is restricted to students in the third and fourth years of high school.

For the best essay written in each school, a bronze Gorgas medal is awarded and the student so honored represents his school in the State competition. A prize of \$10 in cash is given for the best essay in each State. The judges are state officials—the state health office, state superintendent of education and the secretary of state. The state-prize-winning essays are then judged for the

national awards. First Prize is \$500 in cash and a travel allowance of \$200 for a trip to Washington to receive the prize. Second is \$150 in cash and Third Prize \$50.

The subject for this year: The Achievements of William Crawford Gorgas and Their Relation to Our Health.

The dates of the contest: October 21, 1937 to January 21, 1938.

Full information concerning the contest may be found on school bulletin boards or can be obtained from the Gorgas Memorial Institute, Washington, D. C.

MISSISSIPPI VALLEY MEDICAL SOCIETY AWARD

The Mississippi Valley Medical Society offers a cash prize of \$100.00, a gold medal and a certificate of award for the best unpublished essay on a subject of interest and practical value to the general practitioner of medicine. Entrants must be ethical licensed physicians, residents of the United States and graduates of approved medical schools. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society (September 28, 29, 30, 1938), the Society reserving the exclusive right to publish first the essay in its official publication—the Radiologic Review and Mississippi Valley Medical Journal. All contributions shall not exceed 5000 words, be typewritten in English in manuscript form, submitted in five copies, and must be received not later than May 15, 1938. Further details may be secured from Harold Swanberg, M. D., Secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Ill.

EDWARD S. HATCH, M. D.

The many friends of Dr. Edward S. Hatch will hear with sorrow of his death, October 20, 1937, at Touro. He was sixty-two years of age at the time of his death.

Dr. Hatch received his medical training at Harvard and then came to New Orleans to practice his specialty, orthopedic surgery. At one time, he was professor of orthopedics at the Graduate School of Medicine, Tulane University, resigning last June. For more than twenty-five years he was chief of the department of bone and joint surgery at Touro Infirmary; he was chief orthopedist at the Charity Hospital.

WOMEN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

An Executive Committee meeting was held at the home of the President, Mrs. George D. Feldner, on Wednesday, September 29, when routine business was discussed. Mrs. John T. Crebbin of Shreveport, a member of the committee, came to New Orleans to attend.

Each month we are going to try to have an interesting letter from the Parish Medical Society Presidents, expressing their opinion of the Woman's Auxiliary. We are sure our members are going to enjoy them and we thank the doctors for their cooperation. Our first letter is from Dr. James T. Nix, President of the Orleans Parish Medical Society.

LETTER FROM DR. NIX

I am happy to express admiration for the work and the workers of the Woman's Auxiliary to the Louisiana State Medical Society. The multiple activities of your group, simply and efficiently executed, serve as a complement to the high purpose of organized medicine.

In my contacts with your local group, I have seen the Auxiliary in active service. Your New Orleans unit, led by its officers, has collected and donated a substantial fund for the binding of important journals in the library of the Orleans Parish Medical Society; it has spread sound health advice by distributing Hygeia in local schools; it has provided charitable institutions with drug samples, secured from doctors' offices and from pharmaceutical firms.

The Auxiliary, true to its name, has aided the Orleans Parish Medical Society, through cooperation with Dr. Alton Ochsner, the able Chairman of Longer Life Week, to make that event one of the most outstanding of the year.

All these activities represent only a component

of the aggregate service of the Auxiliary to the Louisiana State Medical Society. Whatever accomplishments the Auxiliaries of other states and other countries might claim, no Auxiliary could do its part more than Louisiana's, none could have a fuller program for the coming year. Sincere wishes for success and deep assurance of our wholehearted support in your anti-tuberculosis and safe-driving campaigns, in your labor for increasing the Indigent Physicians' Fund, in your cooperation with the Women's Field Army of the American Society for the Control of Cancer—in each of your humanitarian activities, Godspeed in all future endeavors, with sentiments of esteem and kindest regards, may I ever remain, Your humble servant,

Jas. T. Nix, M. D.

ORLEANS PARISH

The opening meeting of the Auxiliary was held on Wednesday, October 3, 1937, at the Orleans Club. The President, Mrs. Jules Myron Davidson, presided.

The membership had the pleasure and privilege of hearing Dr. James T. Nix, President of the Orleans Parish Medical Society, and Dean of the Postgraduate School of Medicine at the Louisiana State Medical Center. His subject was "My Hobby—Scrapbooks." He read quotations of famous poets, and some of his original poems. Dr. Nix also spoke of the Auxiliary and its importance to organized medicine.

Extensive plans for the year's work were outlined and reports of the various standing committees were given. Again the Auxiliary will sponsor an anti-tuberculosis program in the schools and will institute a safe driving campaign.

The Auxiliary is very happy to announce the addition of twenty-three new members to its role and trust this will be an incentive for many more of the wives of the members of the Orleans Parish Medical Society who are not already members to join our ranks.

Mrs. S. M. Blackshear,
Publicity Chairman.

CADDO PARISH

The Woman's Auxiliary to the Shreveport Medical Society met on Wednesday afternoon, October 3, 1937, in the home of Mrs. F. G. Ellis. Mrs. John T. Crebbin and Mrs. R. T. Lucas poured coffee. After the business session there was a delightful musical program by the following: vocal numbers, Mrs. B. C. Garret and Mrs. Elizabeth Goodwin;

piano, Mrs. L. L. Davidge, Mrs. J. M. Gorton, Mrs. Rufus Davidson and Miss Ernestine Kinnebrew.

At the business session Mrs. Oxford, Chairman of the Public Relations Committee, announced that there would be a continuation of last year's class in parliamentary law. The class will be open to all Auxiliary members and will again be conducted by Mrs. C. E. Rew.

It was voted to contribute ten dollars to the Indigent Physicians' fund and five dollars to the Community Chest.

Mrs. John L. Scales,
Publicity Chairman.

TO AMERICA'S SCHOOLS

Your Health—A New Radio Program For Schools

The American Medical Association and the National Broadcasting Company present each week over the Red Network a program of dramatized health messages intended to furnish graphic supplementary material for health teaching in junior and senior high schools. Much of this material is also useful for elementary schools, especially in the higher grades.

The program is broadcast each Wednesday from 2 to 2:30 p. m. Eastern Standard Time, one hour earlier Central Time, two hours earlier Mountain Time and three hours earlier Pacific Time.

The program will be presented in nine groups of four programs each, beginning October 13, 1937, and running consecutively through June 15, 1938.

The general subjects to be presented are: Personal Health; Hygiene; Diet; Contagious Diseases; Diseases of Middle Age; Public Health; Health Education; Mothers and Children; and Using Health Knowledge. See the October issue of *Hygeia*, the health magazine, for full program and subsequent issues for detail announcements.

Now that the auxiliaries have all started their fall and winter activities we are very anxious to have news items from each Auxiliary. Will you please send me some news for the next issue of the Journal. In case you have forgotten, my address is 1472 Arabella Street, New Orleans.

The committees are all making wonderful plans for the Southern Medical meeting here in New Orleans, November 30 to December 3. Mrs. George Taquino is chairman in charge of the woman's entertainment and a splendid program is promised. We hope to see our auxiliaries well represented.

Mrs. Lucian W. Alexander, Chairman,
Press and Publicity.

BOOK REVIEWS

Synopsis of Gynecology Based on the Textbook, Diseases of Women: By Harry Sturgeon Crossen, M. D., F. A. C. S., and Robert James Crossen, M. D. St. Louis, The C. V. Mosby Company, 1937. pp. 247. Price \$3.00.

This little compendium is a synopsis of the larger volume, "Diseases of Women," written by the same authors. It is an excellent synopsis, as synopses go, but suffers for that reason alone; detail and completeness have been sacrificed for the conservation of space.

The senior author in the preface states that "Diseases of Women" is intended as a text for students who propose to practice gynecology and that the shorter synopsis is offered for those students who choose other specialties.

"Diseases of Women" is a standard textbook used in teaching gynecology and, in the reviewer's opinion, is the best single volume text for this purpose because it provides just sufficient detail to afford the medical student a comprehensive understanding of the subject. The synopsis loses the detail and thoroughness which make the larger book valuable. It cannot be considered an adequate text for teaching gynecology even for those students who will practice other specialties. The justification for its existence is certainly questionable.

E. PERRY THOMAS, M. D.

Electrocardiography: By Chauncey C. Maher, B. S., M. D. Baltimore, William Wood & Co., 1937. pp. 250. Price \$4.00

This second edition contains the same number of pages as the first. Much of the first chapter is drawn from, "The Criteria for Classification and Diagnosis of Heart Disease" published by the New York Tuberculosis and Health Association and approved by the American Heart Association.

There is some improvement over the first edition. Some of electrocardiograms in which the interpretations in the first edition are not correct have been corrected. In the new edition he says more about Lead IV., but the description is not sufficient to give the beginner an adequate idea of the subject. In the new edition, he discusses rather briefly the theory of the circus movement as the mechanism involved in auricular flutter and fibrillation. This was not mentioned in the first edition. Mention is also made of the theory of multiple ectopic foci in the auricle giving rise to fibrillation and flutter. He makes use of the new nomenclature in the description of bundle branch block. He has dropped the term "decompensation" and uses in its place "insufficiency" to describe heart failure, which I consider a better term. The text has been rearranged to some

slight degree. The diagrams and reproductions are very good. The beginner will find much that is instructive in this book.

J. M. BAMBER, M. D.

System of Clinical Medicine: By Thomas Dixon Savill, M. D. (Lond.) Baltimore, William Wood and Co., 1936. 1114 pages. Price \$9.00.

This well known book in its tenth edition has maintained its original plan and arrangement.

Each chapter is divided into three parts. The first part deals with the symptoms of a particular disease more or less in detail, plus a brief discussion of other causes which could give origin to the symptomatology described. The second part discusses the physical signs and the various methods used to elicit them. The third "consists of a clinical classification of the various maladies affecting that region, and a summary of the routine procedure to be adopted."

The present edition has been thoroughly revised and new material added to keep pace with the latest advances in medicine. New sections have been written on esophagoscopy, bronchoscopy, special diet régimes, endocrine factors in the menstrual cycle, cerebral angiography and many others.

In keeping with the present trend in medical treatise writing, seventeen specialists collaborated in revising the sections dealing with their particular field of endeavour. The book although not profusely illustrated contains plates, photographs and drawings that have been well chosen to explain the text.

Savill's "System of Clinical Medicine" is not meant for the specialist but is thoroughly suited for the student and busy practitioner, who wish to obtain, in the least amount of time possible, the greatest bulk of information obtainable. It is, therefore, a valuable book to have on the desk.

ALBERTO PRIETO, M. D.

Community Health Organization: Edited by Ira V. Hiscock, M. D., for the Committee on Administrative Practice of the American Public Health Association. Enlarged and revised edition July, 1932; reprinted February, 1935. New York, The Commonwealth Fund. pp. 251. Price \$2.50.

The principle of supplying a small comprehensive treatise on a special subject to those particularly interested in it has met with eminent success in the hands of Dr. Hiscock.

The author has contributed far more than a simple outline of administrative procedure in community health work. This small book contains all of the necessary principles and philosophies under-

lying social health agency activities to make every technical method described by the author understandable and interesting.

If I want ready information on the rationale and technics of community health, I shall turn first to this book for I know I will find there the basic assumptions and methods from which I can be lead by references to more exhaustive studies of the subject.

There can be no real adverse criticisms of this book. Dr. Hiscock has excelled in restraint and produced a work worthy of the interests of all concerned with the practice of community health administration and one well worth reading by all who have the slightest academic interest in the subject.

W. H. PERKINS, M. D.

Sickness and Insurance: By Harry Alvin Millis. Chicago, University of Chicago Press, 1937. pp. 166. Price \$2.00.

This timely book, which has been written by a layman, appears at a time when the question of socialized medicine is receiving much attention from the medical profession.

The first section of the book is devoted to a discussion of the sickness problem as it now exists in the United States. Professor Millis shows with his figures and statistics that people belonging to the low income group are unable, to a large extent, to meet the financial stress attendant on a serious or prolonged sickness. He discusses present day trends such as group hospitalization and private group clinics.

In the second section, there is a rather exhaustive study of the present status of compulsory health insurance abroad, in which he devotes considerable space to the development and management of this problem in Germany, England, and France. Apparently, each country has a different system in operation, which is developed according to its needs. Existing defects in any system are evidently difficult to correct. The status and quality of medical work in these countries is not discussed in any great detail. His studies appear to be mainly on the physical aspect of the operation of such systems.

The third and most interesting section of the book comprises a study of the compulsory health insurance movement in the United States, along with suggested plans for its development. He recognizes that for any intelligent, workable plan to be put in efficient operation it must be put on a compulsory, rather than a voluntary basis, and should not be left to the competition of various private organizations. All funds raised by compulsory insurance for individuals in the low income class are obtained from three sources; name-

ly, the insured, his employer, and governmental grants. One suggestion (that of Dr. Parran) is that any plan adopted should be limited in its scope to major illnesses, which are the most costly.

HENRY D. OGDEN, M. D.

The Colon As a Health Regulator—From a Surgeons' Point of View: The effects and treatments of its developmental abnormalities: By Sir Henry M. W. Gray. Toronto, The Macmillan Company of Canada, Ltd., 1936. pp. 100. Price \$2.50.

This little volume is well printed on good paper and the illustrations are above criticism. It is written in the delightful strain of this well-known surgeon and there is no possibility of mistaking any detail of the procedure he recommends. His advocacy for a "house cleaning" of the abdomen is backed by excellent data from his extensive service. Whether or not his suggestions are suitable for acceptance by less experienced and less enthusiastic operations is a question that must make us pause. In any event, the volume is interesting and well worth while not only to the surgeon but to the internist.

O. W. BETHEA, M. D.

International Clinics, vol. 2, June 1937. Philadelphia, J. B. Lippincott Co., 1937. pp. 315. Price \$2.50.

In a publication that is uniformly good, one is only required to call the attention of his readers to the fact that the present volume merits their consideration. Puerperal Infection; The Eye in Diagnosis; Biliary Surgery in 1936; The Clinical Significance of Abdominal Pain, are only a few of the many excellent articles to be found in this book.

I. L. ROBBINS, M. D.

Genealogy of Sex: By Curt Thesing, M. D., New York, Emerson, 1934. pp. 286. Price \$2.95.

Sex in its myriad manifestations, in its charming and enthralling evolution, unfolds itself to the reader of this entrancing story of the genealogy of sex in a manner calculated to excite one's admiration, at the profound erudition of the eminent author and the ingenious inventions of the innumerable forms of life bent upon the propagation and persistence of their kind, in contact with a variable environment both kind and favorable, or harsh and injurious.

The alluring story of the love life of these animals from the simple unicellular to the complex multicellular, is one so replete with facts that are curious and uncanny that repeatedly one is reminded of the adage that truth is surely stranger than fiction.

The love habits and mating of life, ranging from eel to the elephant and from the minnow to man, are told with the skill and precision of a great scientist and the art of a true story-teller.

The illustrations are excellent; they reveal in a way far superior to words, the way of a male and a female. The index is satisfactory and enhances the value of the book.

I. L. ROBBINS, M. D.

Aids to Physiology: By Henry Dryere. Baltimore, Wm. Wood & Company, 1937. 295 pp. Price \$1.25.

This small volume belongs to the "Students' Aid Series" published in Great Britain and is designed "to assist the student in collecting and summarizing the information derived from the larger textbooks and lecture notes". The style is concise and logical and the subject matter of the first edition has been rewritten and brought up to date. A chapter on reproduction has also been added.

It is unfortunate, however, that further revision and additions were not made. There has been a growing tendency to teach physiology from the point of view of its applications to medicine. This is reflected in the character of the more recently published textbooks. Many subjects now included in modern courses and texts are entirely omitted or inadequately treated in the Aid. Amongst these are the anemias, venous and capillary pressures, cardiac valvular abnormalities, periodic breathing, conditioned reflexes and referred pain. It would seem, therefore that the Aid would have only limited value to the average student at the present time.

H. S. MAYERSON, Ph. D.

Pathology: By E. B. Krumbhaar, M. D. New York, Paul B. Hoeber, 1937. pp. 206. Price \$2.00.

The aim of this little volume is to give in a concise and readable form a special phase of the history of medicine, namely, pathology. The author has treated the trends in pathology rather than the chronological sequence and this makes the primer quite interesting. Most valuable is a chronological list of the important events in the progress of this specialty with the attempt to give "first descriptions". The book is well written, clear and instructive.

JOSEPH ZISKIND, M. D.

Manual of the Diseases of the Eye: By Charles H. May, M. D. Baltimore, William Wood, 1937. pp. 498. Price \$4.00.

During the past decade I have reviewed several editions of this little classic, which has been read by more people than any other ophthalmic textbook ever written. The reason is that it contains only

the important and the interesting, and expressed in the fewest words.

The fifteenth edition is practically the same size as the last edition and has a similar arrangement. Some of the illustrations have been modernized, and a few new ideas including gonioscopy, have been added.

Copper sulphate, yellow oxide of mercury and other older remedies are rather generously recommended, while newer remedies are recommended less than their merits apparently warrant. The classification, especially of corneal diseases, is becoming obsolete. The very brief table of contents could be expanded to advantage; this would greatly increase the accessibility of the subject matter. The actual technic of refraction should be described at greater length.

Those who want a condensed book on diseases of the eye will make no mistake in reading, and then reading again, this little classic which is without a peer.

CHARLES A. BAHN, M. D.

Emotional Adjustment in Marriage: By LeMon Clark, M. S., M. D. St. Louis, C. V. Mosby Co., 1937. pp. 261. Price \$3.00.

This is an interesting book on a very vital subject. The author's aims are: 1. To increase the sum total of human happiness by seeking to contribute further truths upon which a satisfactory adjustment of the sex side of marriage may be based. 2. To educate the parent to educate the child concerning sex matters. He points out that, in the past, prudery, prejudice, and superstition have so dominated our attitude towards sex that it has been impossible to approach it closely enough to see it clearly.

The book contains no highly scientific terms and is readily understood by the student as well as by the teacher. It is highly valuable to the physician who is confronted with patients seeking advice on sex matters.

HARRY MEYER, M. D.

Adaptation in Pathological Processes: By William H. Welch, M. D., LL. D. Baltimore, Johns Hopkins Press, 1937. pp. 58. Price \$1.50.

"Adaptation in Pathological Processes" is the title of an address delivered 40 years ago by Dr. William H. Welch. That it should be reprinted today in the admirable publications of the Johns Hopkins Press is due principally to the remarkable applicability of the principles enunciated by the author to the same biologic problem today. This is the manifest reason; but, in addition, it is due to a curiosity and interest which the subject never fails to evoke among scientific and medical men. The oration was delivered by Dr. Welch in 1897 before the Congress of American Physicians

and Surgeons. The subject expounded is one which, in the author's own words, "possesses the broadest biological, as well as medical, interest". It is concerned chiefly with the description and explanation of those "morbid processes which bring about some sort of adjustment to changed conditions due to injury or disease". This is the central theme, and the reader soon becomes aware that the author is possessed of a profound insight into the subtleties and wonders of this phase of medical science.

Accurate information of the subject discussed so brilliantly by Dr. Welch was made possible as early as 1615-16 by Harvey's work and lectures on the circulation of the blood, but precise knowledge was not obtained until the past century. During the lifetime of Dr. Welch (1850-1934), vast amounts of material on the subject were accumulated, a large part of which was due to Dr. Welch's endeavors.

The essay carries a splendid introduction by Dr. Simon Flexner, who was retired as director from the Rockefeller Institute for Medical Research in 1935. Dr. Flexner clearly points out the biologic qualities in which the knowledge of the day was especially scant at the time of the delivery of the address, and remarks upon the astonishingly few amendments and additions which are necessary to make the essay applicable to current conceptions. And he adds, too, in a truthful and gracious manner, that the doctrine is far more defensible today than it was 40 years ago.

The introduction is enthusiastic as concerns the biologic and medical qualities of the essay, but is neglectful of the historical interest. For those all-too-few students of medicine who are engaged in, or sympathetic with, the perusal and preservation of medical classics, this neat, thin publication will be cheerfully and promptly received.

ROBERT S. MUNGER, M. D.

Clinical Allergy: By Louis Tuft, M. D. Philadelphia, W. B. Saunders Co., 1937. pp. 711. Price, \$8.00.

This is an up to date book, well adapted both for student and teacher of allergy. Besides reviewing thoroughly the data already accepted and published, the author adds original research views throughout the book.

The chapter on physical allergy, however, could be improved and the extensive quotations abbreviated; the chapter on pollens could be illustrated in the manner of Scheppegegrell or Woodhouse's book. Survey maps as in Durham's book would be a valuable addition. Cannon's theory on the autonomic neuro-effector system should find due consideration in a subsequent edition.

The main feature which recommends the book

is the arrangement of the whole allergic problem into chapters dealing with one form of allergy at a time and ending with a resumé at the end of each. The whole matter is offered the reader in an interesting and instructive form. A valuable book to have on hand for instant reference.

NARCISSE F. THIBERGE, M. D.

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BRAIN TUMORS* A SYMPOSIUM

EYE FINDINGS AS AN AID IN THE DIAGNOSING AND LOCALIZATION OF BRAIN TUMORS

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It would be futile to attempt any thorough discussion of all the various ocular symptoms associated with brain tumors and so in this short space of time I shall try to mention in a general way the most common and to discuss more freely those of seemingly greatest importance.

Ocular symptoms resulting from brain tumors fall into two general classes: First, those resulting from intracranial pressure and second, those resulting from injury to or dysfunction of the motor and sensory tracts to the eyeball. The first tells us in no uncertain terms that something is wrong, but the mechanical force which gives us the warning often confuses the issue, not only furnishing no definite clue as to the location of the lesion but often leading one astray.

OBJECTIVE SIGNS OF INTRACRANIAL PRESSURE

The most common objective symptom of intracranial pressure is papilledema or choked disc which may or may not be associated with a mild degree of exophthalmos. It is usually bilateral but if unilateral rarely means anything except in instances where tumors in the region of the chiasm or intracranial portion of the optic nerve produce pressure on the optic nerve and foramen. In such a case there could be atrophy and blindness on the side of the lesion with papilledema on the opposite side.

In addition to papilledema, intracranial pressure may result in a stretching, or constriction of, or a pressure on any of the oculomotor nerves. James Collier explains this as being the result of a shifting backward of the brain, the effect being traction on the nerves attached to the brain stem, the amount of traction being directly in proportion to a straight fronto-caudal direction. With this as a basis he gives the order of paralysis as, first, the sixth, then the third and finally the seventh and eighth nerves. Cushing gives a different explanation, stating that as the sixth nerve runs directly forward it meets the anterior inferior cerebellar and the internal auditory arteries at right angles. In many cases these vessels lie ventral to the nerve and it (the nerve) is liable to compression between the vessels and the pons.

The third nerve has a very close relationship with cerebral vessels and as a result of intracranial pressure may be pinched between the superior cerebellar and the posterior cerebral arteries.

It may be stated in a general way, that infiltrating tumors are more prone to produce intracranial pressure than those which simply displace tissue, and that the nearer they are to the base of the brain the greater is this tendency. As instances illustrating this point may be mentioned tumors of the pineal or quadrigeminal bodies, the cerebellum, and tumors located in the region of the cerebello-pontine angle.

OCULAR SIGNS

There exists a very close relationship between the third, fourth and sixth cranial nerves together with the eighth and the cerebellum, the latter association being necessary for the maintenance of equilibrium.

These three motor nuclei are situated on each side of a midline, beneath the aqueduct of Syl-

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

vius on the floor of the fourth ventricle. The nuclei of the opposite sides are interconnected and on the same side are associated with each other by the posterior longitudinal bundle which in turn gives association with the seventh and eighth nucleus and cerebellum.

The cerebellum contains the co-ordinating center for ocular movements and is located in the anterior end of the vermis close to the median line. The central connections of these nuclei are indeed complex and no final agreement has been reached.

There is a cortical center for voluntary eye movements located in the posterior portion of the second frontal convolution and one for fixation in the occipital lobe. The angular gyrus is thought to be a thoroughfare for fibers between these two centers.

The supranuclear center for lateral movement is thought to be located near the sixth nerve nucleus and has charge of stimuli from the opposite side.

Paralysis of the motor nerves to the eye can of course be caused by any lesion existing in their pathways from the cortical centers to the muscles themselves and these lesions are classified as supranuclear, nuclear, and infranuclear.

The cortical centers are association centers for complicated movements of the eyeball and tumors affecting these centers, as well as the supranuclear paths, do not cause paralysis of any one muscle or disconnected groups of muscles, but rather cause paralysis of the various co-ordinated movements such as a lateral gaze.

The innervation for associated movements, however, is contra-lateral so that a paralyzing lesion on the right would cause a conjugate deviation of the eyes to the right, the left muscles being paralyzed. In other words, in this instance, the eyes look toward the lesion. In irritative lesions however, the left side being stimulated, the reverse would be true.

Unlike the supranuclear lesions, nuclear lesions may involve one or a group of muscles and when a group is involved it may be muscles which have no co-ordinate movements. Total ophthalmoplegia of one eye can hardly be nuclear, but bilateral. Ophthalmoplegia externa or ophthalmoplegia interna are nuclear in origin.

An isolated paralysis of one or two muscles is usually nuclear, provided injury to the ter-

minal nerve endings or the muscles themselves can be excluded.

As a general rule, nuclear lesions of the third differ from the infranuclear in that the latter rarely spare the sphincter pupillae or the ciliary muscle.

The afferent light pathway begins in the retina and pupillomotor fibers pass from the retina through the optic tract to the primary visual center, whence they avoid the external geniculate body (questioned by some) and pass by way of the superior brachium to the superior colliculus. Here new fibers begin and connect with the Edinger-Westphal nucleus. The efferent nerve fibers then pass by way of the third nerve to the ciliary ganglion and from there to the iris and ciliary body.

Complete destruction of the optic tract anterior to or involving the primary center results in:

1—No direct pupillary reaction on the same side.

2—No consensual reaction on the opposite side.

3—Consensual reaction on the same side.

Complete destruction of the third nerve anterior to the nucleus, results in:

1—No direct reaction on the same side.

2—No consensual reaction on the same side.

3—Consensual reaction on the opposite side.

The Wernicke phenomenon is based on this reaction and will be referred to later.

Fascicular paralysis of the third nerve, i.e., from the nucleus proper to the point of emergence, because of its location in the brain stem and its proximity to the peduncle (before decussation) is oftener than not associated with this structure in a common lesion, thereby resulting in palsies involving the opposite side.

The sixth nerve may be involved with the seventh owing to the peculiar manner in which the seventh curves around the sixth nucleus before emergence, and for this reason nuclear lesions of the seventh often produce paralysis of the sixth, together with complete homolateral paralysis of the entire side of the face. Infranuclear lesions of the seventh from the point of emergence to the geniculate ganglion also involve lacrimal secretory fibers. Lesions peripheral to the ganglion do not affect lacrimation.

The first and second divisions of the trige-

minal nerve supply the eye. Lesions or injury to any part of the pathway results in desensitization of the eye with absence of corneal reflex. If the lesion is peripheral, corneal ulceration and neuro-paralysis occur in addition.

OPTIC TRACTS

The optic tracts, the connecting link between the optical and the cortical retinas, enter the skull through the optic foramen. They then converge and join to form the optic commissure. They then diverge and circling the brain stem, reach the primary visual centers, the external geniculate body, the optic thalamus and the superior colliculus.

From the external geniculate body, fibers or third neurons pass by way of the posterior end of the internal capsule and optic radiations to reach the higher visual centers located on the mesial and to a less extent the lateral surface of the posterior portion of the occipital lobe together with its posterior pole.

In the higher visual centers, located in the calcarine cortex, certain definite areas have been located and plotted which represent corresponding areas in the optical retina. In a general way it may be described as follows: The upper visual fields are represented below the calcarine sulcus and the lower fields above. The peripheral fields are located anteriorly, the horizontal equatorial areas in the bottom of the sulcus and the macular region in the posterior portion at the pole.

Tumors affecting the intracranial portion of the optic nerve, anterior to the commissure, would of course affect only one eye, with early atrophy and total or partial blindness on the same side. There could be, as referred to previously, a possible papilledema of the opposite side.

In the normal chiasm, the nasal fibers are located centrally or mesially while the temporal fibers are located laterally and it is in this partial decussation where the most bizarre types of visual fields are found. The classic, or possibly I should say the most common type, is one in which the superior temporal quadrants are first affected. Following this the remaining temporal goes, then the upper or lower nasal and next, blindness.

VISUAL FIELDS

Fields vary greatly, depending among other

things on the length of the intracranial portion of the optic nerve. The farther back the chiasm, the greater the opportunity for a simultaneous involvement of the optic nerve by pituitary or other tumors of that region. With a very short optic nerve, however, the chiasm will be well forward and the same complication holds true but with reference to the optic tracts posteriorly.

Irregular and bizarre types of fields, together with a beginning bitemporal quality, may then be regarded as being more or less typical of chiasmal lesions.

Bilateral involvement of the nasal fields are uncommon and are generally assumed to be due to lateral pressure from the carotids themselves or due to some pressure from above such as a distended third ventricle forcing the temporal fibers against the more or less rigid vessels.

From the optic commissure to the cortex, each tract contains uncrossed temporal fibers including those of the temporal macula and crossed nasal fibers also including those of the nasal macula.

As the optic tract reaches the primary centers, about 80 per cent of the fibers go to the external geniculate body while the rest pass on to the superior colliculus. Only fibers from the geniculate body pass to the calcarine cortex, while the superior colliculus is associated with the motor nuclei.

In passing from the external geniculate body, the optic fibers widen out into a sort of fan shape and forming the optic radiations pass directly backward toward the calcarine cortex.

In 1907, Adolph Meyer described how a part of the optic radiations, as they leave the external geniculate body, instead of sweeping directly backward as the rest, extend far forward into the temporal lobe before turning backward. This ventral band is known as "Meyer's loop" and will be referred to later.

DIFFERENTIATION OF ANOPIAS

In a general way, the essential differences between anopsias above the primary visual centers and those of the tract and the primary centers are as follows:

1. The Wernicke pupillary phenomenon is absent.
2. Atrophy, visible in the nerve head, is not in evidence.

3. Instead of complete forms of homonymous hemianopsia, the hemianopsia takes the form of irregular homonymous anopsia, with a tendency finally to a total loss of half vision.

4. The preservation of the macular area.

The Wernicke phenomenon is based on the pupillomotor reflex and is elicited by casting a beam of light on the supposedly involved retina. If the lesion is above the primary visual centers, there will be a consensual reaction in the opposite eye.

The absence of atrophy is of diagnostic value in cases of long standing and may be complicated by an atrophy following a former papilledema.

The hemianopsias being partial, as a rule, finally enlarging until all but the macular area is involved, are due to an expansion of the fibers in the radiations in dorsal, lateral and ventral bundles, the ventral bundle as has been mentioned, forming the Meyer's loop.

The sparing of the macula is generally attributed to the fact of its large area and posterior position in the calcarine cortex together with a double blood supply.

Involvement of the ventral bundle of optic radiations or the Meyer's loop shows partial field defects, short of hemianopsias with the greatest defect on the affected side. The field defects are commonly quadrant in type.

Another feature of lesions in this area is the frequency of visual hallucinations, sometimes accompanied by the so-called uncinat seizures, due to involvement of the uncinat process of the hippocampal gyrus.

A sloping tendency of the dividing line in visual fields has been alluded to as rather characteristic of lesions involving the other portions of the radiations.

CONCLUSIONS

1. Choked disc is purely a diagnostic sign of intracranial pressure but otherwise of little value so far as localization is concerned.

2. In the presence of intracranial pressure, infranuclear involvement of the third, fourth, and sixth cranial nerves loses much value as

localizing symptoms but if intracranial pressure is absent, this is helpful.

3. Perimetric findings are of great aid in localizing brain tumors and by careful fields, the separate parts of the tract may be differentiated.

4. Involvement of Meyer's loop with visual hallucinations and so-called uncinat seizures is almost a positive localizing sign.

THE ROLE OF THE NEUROLOGIST IN BRAIN TUMOR

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From the nature of this program one is impressed by the evident fact that the subject of brain tumor concerns more than just the neurologist. Indeed, the neurologist must acknowledge that he should call upon the aid which men in other specialties can give him. Oftentimes confirmation of the presence or absence of a brain tumor comes from the ophthalmologist, radiologist, otologist or rhinologist. Be that as it may, the brunt of responsibility for the diagnosis and localization of a brain tumor lies with the neurologist. With an adequate knowledge of the anatomy of the central nervous system and its normal and pathologic physiology and with a good storehouse of experience the neurologist takes, by virtue of this background, the leading role in the diagnosis of a case.

With all this background and all the tests that the neurologist knows, he determines the functional activity or falling out of activity of nerve structures. It must be conceded at the outset that diagnosis of a brain tumor is often very difficult and at times even impossible. As in other branches of medicine, much thought has been given to discovering means by which diagnosis can be made with greater ease and certainty. In the past decade, hand-in-hand with the interest and impetus to progress which the general subject of neurology has acquired, methods for subtler and keener diagnosis have become available. A few will be mentioned later.

SYMPTOMS

Let it not be imagined that all cases of brain tumor present the classical symptoms which

are mentioned in the textbooks. I refer to headache, projectile vomiting and choked disc. Would it not be easy if this were the case? And what about localization? Where does the growth lie? What information does that give the brain surgeon who must go after the tumor? He cannot cut windows into the skull to look for it. This is, of course, an exaggeration on my part. The surgeon knows better. He demands of the neurologist more specific information as to its location. In fact, he goes further. He is beginning to insist on some advance information, as just what kind of a growth he is going to encounter, for he has learned that he must suit his surgical method to different locations and kinds of tumor, or perhaps he will prefer not to operate at all. The neurologist in turn has had to keep pace with the recent tremendous advance in neurologic surgery and treatment, and has had to equip himself with a knowledge of neuropathologic entities and their morphologic and growth characteristics. Roentgen ray therapy is effective in certain tumors, as medulloblastomas.

To return now to symptoms mentioned: These are simply evidences of increased intracranial pressure, and really, such a triad might occur in any of several general medical conditions, the patient not harboring a neoplasm at all. But where are we to start? As applies to any medical or surgical problem, the history of the case should receive first consideration. A thorough investigation of the nature of the symptoms as they developed, strict attention to the chronology of their appearance, and in which part of the body they appeared, is of major importance. The history alone often gives the clue as to the presence and location of the growth. Special regard should be had for any change which might have been noted in the patient's behavior, his mental state or his speech. These may be the very first symptoms which the patient presents. All information, whether given by the family or by the patient should receive due thought and should be evaluated in the sum total of the entire history.

It is appropriate to consider a few of the commoner symptoms, for instance, headache. Most observers find this present in the great-

est number of cases, and in truth, is most often the very first symptom. The location of the headache is of very little localizing value yet its very presence, its relentless character, and ultimate severity, either constant, intermittent or paroxysmal, deserves attention. The headache, usually deep seated, is frequently associated with dizziness, faintness, confusion, dulling of the intellect, and memory disturbances. The headache may be the specific manifestation of a tumor but more often, as it becomes increasingly more severe, it indicates an increase in intracranial pressure. The latter is a result either of an interference with the outflow and absorption of the cerebrospinal fluid from its channels because of direct pressure by the tumor upon these channels or areas, or it may be due to a progressing expansion of the tumor and its usurping of space which the brain properly should occupy within the unyielding skull, though it may not be proximate to these channels and areas.

Vomiting deserves mention just to dispell the notion that it is always projectile in character. In fact, it is very frequently associated with nausea, especially where there is an increase in intracranial pressure. Nausea frequently occurs alone.

I have referred to the change in the patient's behavior and personality. This may be the very first sign of trouble. At first insidious and hardly evident, it may become quite pronounced. In the absence of a constitutional disease, the physician should be ever alert to the possibility of a brain tumor. Recent surveys of large groups of cases of tumors in all locations of the brain, even in tumors of the posterior fossa, have shown a surprisingly large incidence of mental symptoms. No need to go into the various types of mental symptoms, suffice to say that they occur. One should not make the mistake of diagnosing psychosis and letting it go at that, without also making a thorough neurologic investigation to rule out a possible neoplasm. Many patients in the hospitals for the insane turn out, at necropsy, to have a brain tumor. One per cent to two per cent of deaths in Mt. Sinai, New York, at necropsy are due to brain tumor; so states Globus. The brain is the third most frequent site in which tumor occurs. (Sachs)

Two symptoms which require special attention for their presence invariably means intracranial. Convulsions should arouse suspicion always, for their presence invariably means intracranial trouble. This is especially true when they occur in adults. It would encumber this paper to go into a differential diagnosis of convulsions. The time of onset of the convulsions in relation to other symptoms and signs, and the character of the fits need elucidation. A Jacksonian, whether motor or sensory, is a valuable lead for localization. In the case of a major seizure, attempt should be made to learn in which part of the body the attack starts. The type of seizure gives a clue to its level, the clonic fit being usually due to cortical irritation, the tonic type usually to deeper-seated lesions. As for the speech aberrations, valuable information will come from the patient's family, for it usually is not difficult for them to detect the change. His mental state may alter his speech. Aphasic phenomena give good leads as to the site of the lesion.

OBJECTIVE SIGNS

Thus far nothing has been said of the objective signs. To be able to detect the presence of cerebral trouble presupposes a knowledge of the functional disturbances which result when nerve structures are compromised by disease. The neurologist has conceived various tests to determine the presence of these disturbances. Such disturbances may be in the motor or sensory spheres, in the special senses as vision, smell, hearing or taste, either in their central or peripheral pathways, in the sphere of co-ordination of movements, in the functions subserved by the cranial nerves. It can rightfully be argued that vascular disease, or inflammatory disease or degenerative disease can produce similar disturbances. In the evaluation of this data the careful clinician takes into consideration many factors, factors which a good doctor in any situation takes into consideration, the history of the course and development of the symptoms and signs and finally the objective picture. His clinical experience and intuition must guide him.

A FEW DIAGNOSTIC SYNDROMES

It is needless to mention particular syndromes, since the various regions of the brain

give quite characteristic ones, though often perhaps modified and complicated pictures. To go into this would enlarge this paper to the proportions of a textbook. It will suffice to mention just a few examples which give clues as to location. Such are: the anosmia and optic atrophy of subfrontal and suprasellar lesions; the mental symptoms of frontal lobe tumors; the spastic phenomena and forced gasping and sucking reflexes of the prefrontal regions; the pareses and paralyses, either with or without convulsions, of the motor areas; the sensory disturbances of the sensory parietal area; the aphasia and agnosia of the speech areas; the apraxia of the corpus callosum; the visual field disturbances, the hemianopsia and quadrantanopsia, and the auditory and visual hallucinations of the temporal and occipital lobes; the uncinate fits of temporo-sphenoidal lobe lesions; the decerebrate phenomena of diencephalic lesions; the pupillary disturbances and difficulties of conjugate eye movements of mid-brain and brain stem lesions; the vegetative, temperature and sleep rhythm disturbances of the hypothalamic centers; the skeletal changes in pituitary trouble; disturbance of body temperature, fat and water metabolism and usually polyuria in lesions involving the area of the tuber cinereum; the coordination difficulties of the cerebellum and its connections; the disturbances of the individual cranial nerves and so on.

Papilledema itself betrays an increased intracranial pressure. Its appearance early in the course of the case indicates that the ventricular system is being obstructed by the tumor. This is most likely to occur where the tumor compresses the brain stem, and points quickly to the posterior fossa or the mid-brain. Otherwise, papilledema itself has no localizing value. In this connection a word should be said about the duration of a brain tumor. There are cases with a rapid course, the so-called acute, malignant tumors. The rapid course may be due to the inherent malignant character of the tumor, as the spongioblastoma multiforme. Its malignancy, like a cancer of any other tissue can kill, yet the tumor itself be relatively small in size and anywhere in the brain. Again, a benign tumor, if situated near the outlets of the cerebrospinal fluid, will cause an early

and rapid increase in intracranial pressure with a rapid increase in signs. The slower course of the tumor may be due to the slow growing nature of the tumor as well as to the fact that it is located at a distance from the fluid channels. Not until late, and when the tumor has reached a large size, will there be an appreciable increase in the intracranial pressure.

SPINAL PUNCTURE AND PRESSURE

Needless to say that it should be our aim to detect and localize the tumor as early as possible. The neurologist can call to his aid various laboratory tests, for instance, the lumbar puncture and estimation of the cerebrospinal fluid pressure. Great caution should be exercised in this procedure, for too sudden a release of the fluid will cause a jamming of the medulla of a swollen brain into the foramen magnum, with tragic results. An increased pressure is of significance. Its protein content should be determined, an increase indicating disturbed mechanics of the cerebral circulation. The fluid might be bloody, it might contain tumor cells. It is known that an increased spinal fluid pressure can occur in conditions other than brain tumor. It can occur in metabolic toxic states, malignant hypertension with crisis, secondary to otitic and meningeal diseases and so on. A useful gauge to distinguish the hydrocephalus which is due to general conditions from that due to brain tumor is the so-called Ayala index. The Ayala index is derived as follows: The initial spinal fluid pressure is recorded from the tube of the water manometer, the patient lying on his side, 10 c.c. of fluid is withdrawn, and the final pressure is recorded. Now the final pressure times the amount of fluid withdrawn divided by the initial pressure, is the index. Let us take an example, using figures. If the initial pressure is 200, and after the removal of 10 c.c. of fluid the pressure drops to 40, the formula is

$$\frac{40 \text{ times } 10}{200} = \frac{400}{200} = 2.$$

When the quotient is less than 5 or 5.5, one can state with a fair degree of certainty that the increased pressure is due to an expanding lesion. In a large number of cases this has proved to be a reliable guide in differentiating increased pressure due to a brain tumor and other causes. When the

Ayala index is above 5, or 5.5, the increased intracranial pressure is generally due to some condition other than brain tumor.

ROENTGEN RAY DIAGNOSIS

The clinical picture may not be a simple one, either because of a paucity of findings or perhaps because of a confusion of many findings—many of which may be due to the too great intracranial pressure. The neurologist employs the ventriculogram or the encephalogram, for these are of special value in the localization of the tumor. The principle behind this is the replacing of the cerebrospinal fluid by air and the taking of roentgen ray pictures in various planes of the skull. The lighter air which has filled the cerebral ventricles and channels causes a rarefied shadow on the plates and outlines the ventricular and subarachnoid spaces, thus showing up any displacement or distortion of these structures. This gives the clue as to where the tumor lies. In the case of the ventriculogram, the air is introduced directly into one of the lateral ventricles of the brain through a trephine opening in the skull. The fluid is at first withdrawn slowly, a few c.c. at a time and an equal amount of air is introduced slowly. The total amount of air that the patient can stand may be between 60 and 120 c.c. and will depend upon the dilatation of the ventricles and also upon the patient's reaction to the procedure. In the encephalogram, the air is introduced by way of the lumbar route through a spinal puncture needle, in the same fractional way as for the ventriculogram. The lighter air ascends into the skull.

A plain roentgen ray plate of the skull may give important information. It may show increased convolutional markings, indicating prolonged increased intracranial pressure. The bones of the skull may show thinning or thickening thus betraying a tumor in the vicinity. An enlarged or eroded sella turcica means something. Calcified nodules frequently lie in tumors and their appearance in the picture may give a clue, as will calcified blood vessels of angiomatous tumors and pineal gland calcification.

SUMMARY

Without becoming too involved in the neurologic aspects of brain tumor it is hoped that some insight has been given into the problems

with which the neurologist must contend in the diagnosis of brain tumor. Little has been said of his methods of examination, of the anatomy and physiology of the central nervous system, of the pathology of brain tumors and of the various clinical pictures which tumors in various locations present.

THE SURGICAL TREATMENT OF BRAIN TUMORS

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Such a title would seem to imply that there are other methods of treating brain tumors than by surgery. Some fifteen or twenty years ago I once heard a neurologist say that he did not have patients with brain tumor operated upon because the results were so bad; even that man has finally learned what everybody knows, that the only way to get rid of a brain tumor is either to remove it or destroy it.

Fifteen and twenty years ago the removal was even a more formidable procedure than it is today and in addition one of the greatest problems was to find the tumor when operated upon, for accurate methods of diagnosis were not available as they are today.

When I started in doing neurologic surgery twenty-five years ago, frequently the tumor was not exposed at operation and, even if it was, the technic to remove it had not been developed. In the past five years we have exposed and removed at operation between 95 per cent and 98 per cent of all tumors. This great change in this phase of the subject has been due to four factors: first, more accurate diagnosis; second, ventriculography (air injection); third, the electric surgical unit; and fourth, the use of suction.

I should like to take up these four factors. First, what additions to diagnosis have been made which have made such a fundamental difference. The first point I would draw your attention to is the great help that has been derived from the accurate study of eye fields. The second is the realization that a brain tumor is not a rare disease, in fact the brain is the second most common organ in which tumors occur. In the past twenty years at Barnes Hos-

pital there have been 1200 cases of carcinoma of the uterus, 720 brain tumors, 550 carcinomas of the stomach, and 511 carcinomas of the breast.

One of the most important points I believe is the recognition of the earliest symptoms and signs of brain tumor, for the successful surgical treatment depends on how early we get hold of the cases. It has been a time honored belief that the earliest symptoms of brain tumor are headache, vomiting and choked disc, but many patients are seen today on whom we can make the diagnosis when at least two of these three symptoms have not yet appeared. There is one symptom which is extremely common that has been frequently overlooked which is one of the earliest signs of brain tumor, and that is convulsions, either focal or general.

I have recently reviewed all my material from this point of view and have been amazed to find how frequently a convulsion preceded all other symptoms or signs of brain tumor by months, and often years. I had been teaching for years that every adult patient who has a convulsion and has not syphilis should be considered as having a tumor until proved otherwise, but until the material was analyzed I did not realize how frequently this symptom was the very first one. In this study were reviewed 724 cases of verified brain tumors. In 20.7 per cent of these cases convulsions occurred at the onset of the disease. Taking out the cerebellar cases from this series there were 397 cases of cerebral tumor and in this group convulsions occurred in 34.8 per cent of the cases, over one-third of the patients. These startling figures deserve to be emphasized as it undoubtedly brings home to us how patients should be dealt with who, in adult life, begin to have convulsions. Whenever there is the slightest suspicion that the convulsion is a focal one, encephalographic studies should be undertaken. Following this procedure there will inevitably be cases which show nothing, but on the other hand every once in a while an unsuspected tumor will be uncovered. Within the past week I have had such an experience. I saw a patient four years ago because of convulsions and condemned him to the inevitable luminal and bromide. Recently because he had been having some headache, he returned, and having these

figures from my recent studies in mind I did an encephalogram and found a tumor.

DISCUSSION

Dr. Theodore J. Dimitry (New Orleans): The fundi pictures of the normal and diseased eye are truly beautiful and the information obtained from such pictures is astounding. They do not alone inform that pathology exists locally, but also reflect many diseases of the body. An example of the latter is that of brain tumor.

On looking with the ophthalmoscope into the eye, a view is obtained of the ending of the optic nerve lobe of the brain. To the ophthalmologist, it is the papilla, and when inflamed, the pathology is a papillitis. An inflammation of the optic nerve behind the eye is an optic neuritis.

The optic nerve is covered as is the brain, by the same fluids. The dura of the brain ends at the eye and blends with the sclera.

Increase of intracranial pressure spells an increase of perioptic nerve pressure, and in consequence, edema is produced in the papilla in that the fluids are impeded in flow from the globe.

Papilledema is an expansion of the optic nerve head, and not an inflammation. Therefore, there is no disturbance in vision, unless the edema has existed for a long period of time. If the cause of the edema is removed, the elevation of the optic nerve subsides and vision continues normal.

It is unfortunate that for so many years confusion existed as regards these terms, and that such an edema was designated a neuritis. A choked disc and a strauungpapille is a papilledema. An inflammation of the papilla is a papillitis; therefore, one may have a papilledema and papillitis.

To consider the many other problems that are revealed by the eye would carry us far along from the allotted time. Yet, I must stress the great assistance these ophthalmic changes are in making the diagnosis. Fields of vision are most valuable. They assist in localizing the growth after the discovery of the tumor is made, and the two can be classed as the outstanding symptoms that make definite an opinion on intracranial lesion.

Dr. G. C. Anderson (New Orleans): I think we are indeed fortunate to have Dr. Sachs here with us today, because he brings what may be considered absolutely the last word in accomplishment in the management of brain tumors. I purposely use the word "management," because it refers not only to the surgical side but to the diagnostic side, and also to deep therapy. To listen to an exposé of this kind is indeed inspiring, and it should provoke us who are working other places to bring our work as nearly as possible up to

the standard that has been set in such clinics as Dr. Sachs'. Compare merely the report of the number of tumors, which he has been able to expose and remove within the past few years, with results obtained even five years ago, to say nothing of ten, and you will see the advance that has been made in the management of these conditions.

I do not feel there is anything to be added to what Dr. Sachs has presented here.

Dr. L. L. Cazenavette (New Orleans): It is not my intention to offer much discussion on the subject of this symposium, but, I feel that certain points should be emphasized even though they may prove to be a repetition of what has been said.

The first paper, read by Dr. Gorton, has been most illuminating. In all focal conditions of the brain, whether neoplastic, cystic or vascular, a perimetric examination should be made. The perimetric findings frequently help to localize the lesion and permit a better interpretation of other symptoms. In ordinary cases of hemiplegia of sudden onset due to vascular disease the perimetric findings are frequently abnormal. In accordance with the particular abnormal picture it is possible to localize the seat of the lesion, thereby adding a finesse to the basic symptoms on which the diagnosis rests. Although I am unable, at this time, to offer figures in explanation of the frequency of such occurrences, I have been surprised at the number of abnormal perimetric findings met with in cases of cerebral hemorrhage.

Dr. Young states that it is usually not difficult to make a diagnosis of brain tumor. I do not agree with this statement for I know that it is very difficult to make a diagnosis of brain tumor and localize the lesion no matter how complete our diagnostic armamentarium may be in this respect. Neurologically, I should say that symptoms pointing to lesions of the cranial nerves and their nuclei are of the greatest importance. I should like to ask Dr. Sachs if in his large experience he has met cases of so-called pseudo-tumors, or meningitis serosa, as reported by Dr. Frazier and others. I understand that papilledema, headache and vomiting are not usually found as symptoms of such conditions, the diagnosis resting more on the persistent symptoms of localization.

To make a diagnosis of brain tumor is a very important and very serious matter. To tell a patient that he has a brain tumor is equivalent to telling one he has cancer. The psychologic effect must be considered; this at times is very great. It is fit therefore to withhold our opinion until such time as will permit elimination of all other conditions capable of simulating brain tumor. Not infrequently encephalitic states may present a pic-

ture difficult to differentiate from that of cranial neoplasm.

Dr. H. R. Unsworth (New Orleans): I should like to ask Dr. Sachs if he will be kind enough to tell us what happens in the convulsive states following removal of the growths.

Dr. W. J. Otis (New Orleans): The unusual behaviors of children, which at times are forerunners of growths, are sometimes overlooked.

Dr. L. W. Gorton (Shreveport): The only thing that should have been added, I think, in the limited time given the paper, is that everyone having a definite reduction in vision in one or both eyes, without obvious cause, should be thoroughly investigated for possibilities of brain complications.

Various colors should be used a great deal more than is the habit of the physician giving rapid practical field tests, for the value of any perimetric finding is equal to the amount of care with which it is done.

Dr. L. Roland Young (Covington): I want to say that in all suspected tumor cases a most thorough examination should be done. A so-called routine is necessary.

I notice Dr. Sachs impressed upon us the symptom of convulsions, a symptom we see so frequently which might often mean brain tumor.

In 1931 Dr. Sachs placed tumor of the brain as the third most frequent place in which tumors occur, and today he raises it to first. I feel sure it is due to the fact that we are better prepared to make a diagnosis of brain tumor, and because of his increasing ability in the handling of these tumor cases. Hence, they go to St. Louis to see him much oftener than they did in 1931.

Dr Ernest L. Sachs (St. Louis, Mo.): I should like to express my great appreciation, if I may, to Dr. Gorton and Dr. Dimitry for emphasizing what they did about papilledema. In years gone by those conditions so frequently used to be called optic neuritis and, as a result, were not truly recognized, as they are by the ophthalmologists today.

Regarding Dr. Cazenavette's question about pseudo-tumors, I think certainly a great many of the cases of so-called tumors which used to be in the literature were undiagnosed tumors. If we had had air injection in those days, I think a great many of those cases would have been localized. I think it was a term first introduced by Oppenheim. We certainly do see patients, I have seen a number of them in the last few years, who have eye ground changes, which the ophthalmologist and myself have both considered a true papilledema and not an inflammatory process, and who have absolutely no other sign of tumor. In those cases, we have done air injections, and if the air injection was normal we kept our hands off. I sup-

pose those are the cases that formerly used to be called pseudo-tumors. As a matter of fact, I do not think they are tumors at all. They are either some form of inflammatory process or the so-called meningitis serosa circumscripta.

In regard to the convulsive states after operation, that is a problem that I think has caused us all a great deal of concern. Particularly after meningiomas have been completely removed, if a patient has had convulsions for a long time he may continue to have convulsions occasionally, but in the course of years they become fewer and fewer. I think the convulsions in those cases are due to scar. We keep them on luminal for a long time. In fact, nearly every case of meningioma is instructed to stay on luminal for at least a year to see if convulsions occur. If they do, they have to continue. They are very few and far between.

Dr. D. H. Duncan, (Shreveport, La.): It is somewhat unfortunate that Dr. Young has been given such a large subject to cover in such a short space of time, as he has, as a consequence of this, been able to touch but briefly some points that merit a rather detailed discussion. In spite of this, he has given an extremely interesting discussion of the major factors involved. I particularly like the emphasis which he has placed upon the necessity of the neurologist bearing the burden of diagnosis. It is frequently necessary, of course, to have the aid of specialists in other fields. Particularly is this true in the case of the ophthalmologist and the otologist. However, the responsibility lies with the neurologist in charge, and his study of the case should be such that the reports of his consultants, while of assistance to him, need not assume a primary place in his diagnostic impressions. I think that his case study should be sufficiently searching to include the more common of the auditory and vestibular tests, as well as field studies, and that he certainly should hold himself responsible for the interpretation of his roentgen ray studies. He is then in position to receive real benefit from the studies made by his consultants.

There is no symptom or sign which may be relied upon for the accurate diagnosis of these lesions, the most constant finding being the gradual progressive disturbance of neurologic function, the nature of the signs and symptoms depending usually upon the situation of the lesion and to a certain extent upon the rapidity of its development. For convenience they may be thought of as general signs, which are signs occurring as a result of increased intracranial pressure, and focal signs occurring as a result of particular location of the lesion.

It is readily apparent that accurate interpretation of the findings is a fair gauge of the examin-

er's neurologic orientation and that only the most complete neurologic case study can be expected to achieve a reasonable degree of accuracy. The more thorough the examination, the less frequently will it be found necessary to resort to special diagnostic procedures such as ventriculography or encephalography, which while of great value, should not be thought to take the place of detailed clinical examination. Though the problem of differential diagnosis, particularly in the case of intracranial vascular disease, may occasionally be difficult, the most frequent source of error is that the physician fails to consider the possibility of intracranial tumor, or awaits the development of pressure signs. In any case showing a progression of neurologic signs, not definitely proved to be the result of non-neoplastic pathology, tumor should be considered as highly probable, and proper steps taken to clear up the situation promptly. Occasionally this may be impossible as most of us have been embarrassed by tumors discovered at autopsy in cases in which other diagnoses were made, and occasionally also exploration fails to reveal tumors erroneously thought to exist. However, in most instances, a rather gratifying degree of accuracy is possible in cases sufficiently early to permit the neuro-surgeon to achieve worthwhile results.

THE CORRELATION BETWEEN THE INCREASE IN LONGEVITY AND THE HIGHER DEATH RATE OF DEGENERATIVE DISEASES IN NEW ORLEANS*

A. E. FOSSIER, M. D.
NEW ORLEANS

It has been frequently said that modern medicine, saving the lives of many weaklings, interferes with the process of natural selection by which resistance to disease is gradually built up. Certain diseases are on the increase: Bright's disease, hardening of the arteries, nervous disorders and cancer; in fact, there is an alarming increase in degenerative diseases among people who have attained the age of 50, while the expectation of life is not increasing. This viewpoint, which has been given wide publicity, is based, not on authentic figures, but on broad generalities and uncertain premises.

The purpose of this thesis is to show that

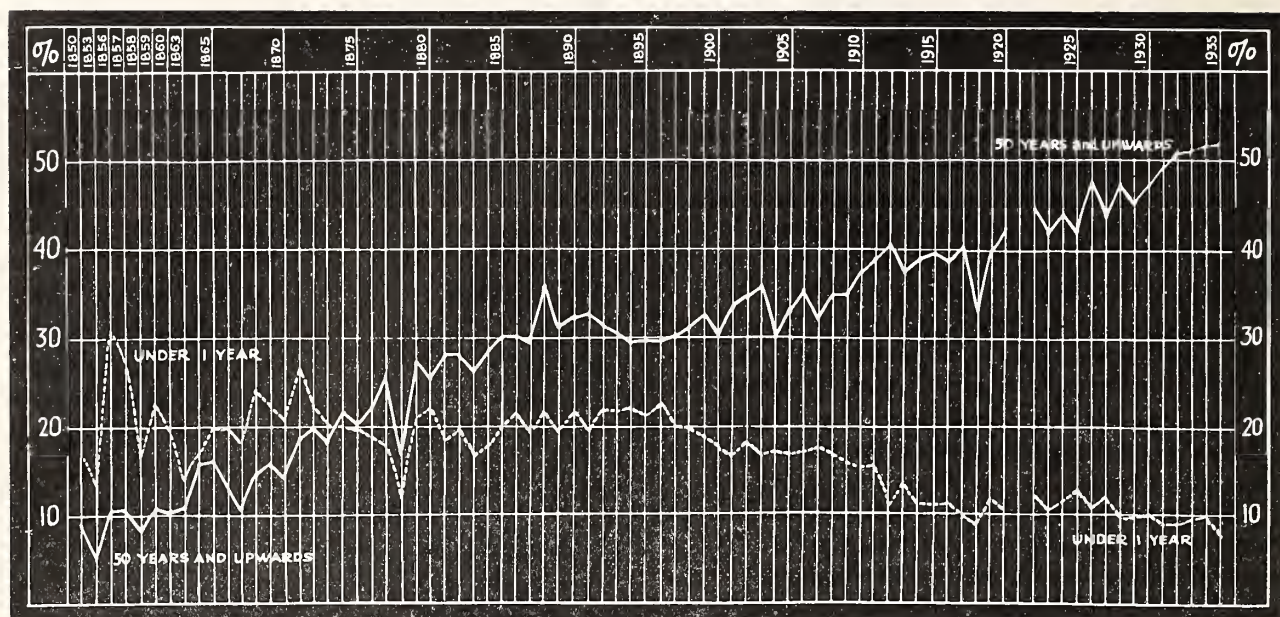
because the deaths of infants, children and young adults have greatly diminished, life expectancy has increased considerably in New Orleans, and that its population has aged materially in the past fifty years. Also, that despite the fact that the so-called degenerative diseases have considerably increased during that time, longevity has increased, and even that the augmenting number of these illnesses has contributed to a large extent to longer life.

This study of the vital statistics of the Board of Health of New Orleans for the past 81 years has revealed many amazing facts, and were they not based on authoritative figures they would appear to be incredible.

Not so very long ago the mortality of infants under one year of age assumed formidable proportions, while the number of deaths, at 50 years and upwards, were on the other hand but relatively few. Not many who lived then attained old age. During the last half of the past century the highest percentage of deaths occurred between birth and the second year, and during the thirtieth and fiftieth years. Today the greater proportion of the population dies after the fiftieth birthday.

During the years 1850 and 1873, the number of deaths in infants, under one year, was greater than in those past fifty. During the period, 1874 to 1880, the two were practically on a par. From that time the death rate of infants under one year has diminished while that of those older than 50 has markedly increased. (Graph 1). In the 1850's the statistics show that the ratio of deaths, 50 years and upwards, to the total number of deaths, as low as 4.1 per cent, and never exceeded 11.2 per cent, while that of infants, under one year, fluctuated between 11 and 31 per cent. Since 1880, the infant mortality has gradually declined, but after the age of 50 it gradually increased. Since that time the former has been reduced from 24 to 8 per cent and the latter has been increased from 25 to 53.3 per cent. These figures are based on deaths from all causes, irrespective of sex and color. The number of deaths among those who were older than 50 has enormously increased, and, consequently, life expectancy has augmented considerably. The number of elderly persons has steadily increased.

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.



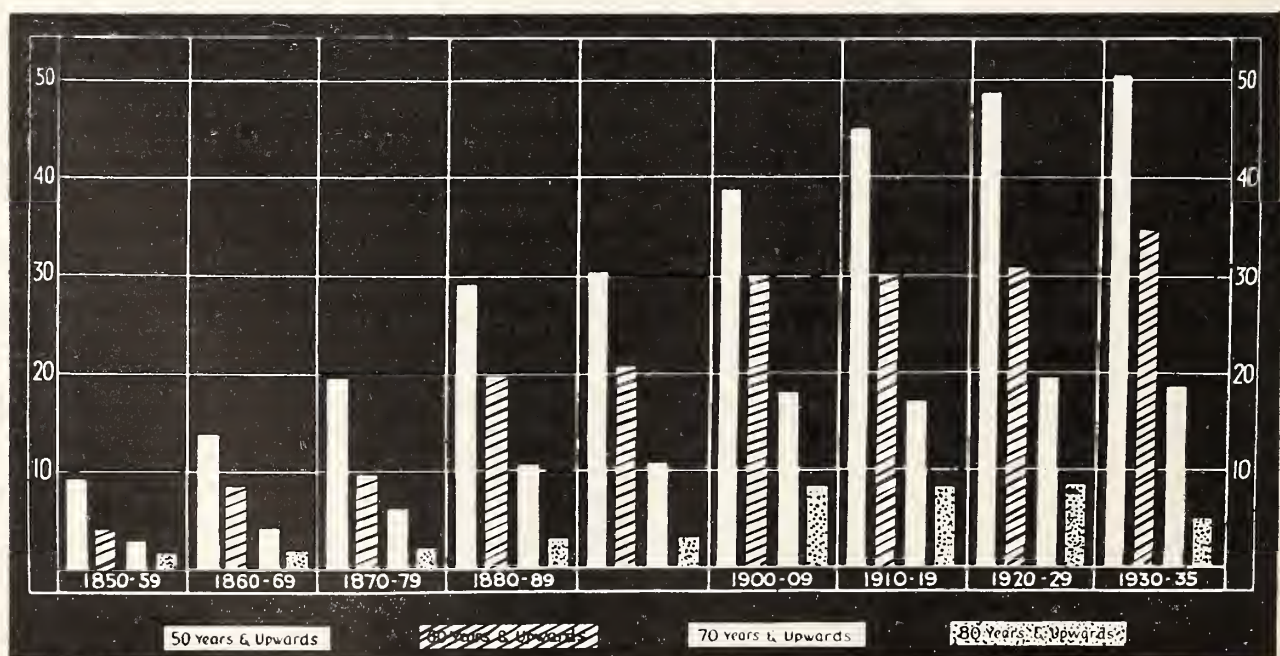
Graph 1. Percentage of total deaths of New Orleans for ages under one year and fifty and upwards.

Unlike many other great centers of population in this country, New Orleans has enjoyed a normal growth. Its accession in population depended not so much on the influx of young persons, as is the case in large manufacturing communities, but largely to its increase in births over deaths and to its ageing population. Of necessity its death rate must be slightly higher than in cities whose population comprises a larger number of younger people, and a deficiency in the proportion of old people. This

fact is attested by the United States Census, for in 1930 only 14.5 per cent of the urban population of the country belonged to that age group.

In the six years, 1930 to 1935 inclusive, the number of deaths occurring after the age of 50 increased sixfold.

It is shown (Graph 2) that during the decade, 1850-1859, only 7.6 per cent of the total deaths, that is, those from all causes, and including both sex and color, occurred in persons



Graph 2. Percentage of total deaths of New Orleans for ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards.

who had passed their fiftieth year, while during the years, 1930-1935, for the same ages, they have increased to 49.9 per cent. Today the percentage of the total deaths of persons 80 years and upwards is practically the same as of those past 50 years in the 1850's. For instance, during the same period, the percentage of deaths of individuals 60 years and upwards increased from 4 to 34 per cent, or more than eightfold. In the age group of 70 and upwards the increase was sixfold, and even in the very old, those past 80, the increase was threefold. During the past 85 years the proportion of deaths to the total mortality, both white and colored, occurring above the age of 50, increased from 8 per cent in the period of 1850 to 1859, to 52 per cent in that of 1930 to 1935. It is therefore evident that the gain in expectation of life has been enormously increased.

The baneful influence of the negro mortality on the longevity of New Orleans merits serious consideration. The colored death rate is much higher than the white and reflects a much lowered life expectancy of the population as a whole. The negroes, both male and female, die much younger than their white neighbors.

The deaths in New Orleans for the years,

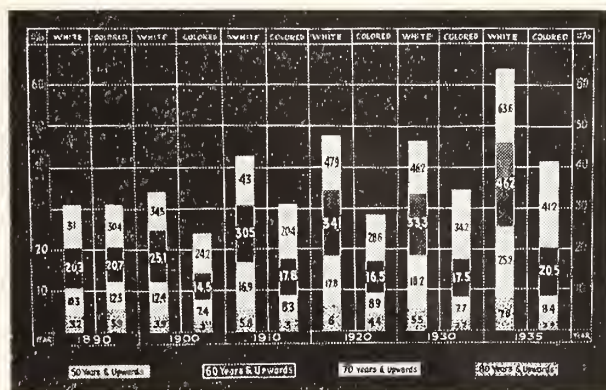
TABLE I.

Percentage of total deaths of New Orleans, whites and colored; for the ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards.

Years	50 years and upwards		60 years and upwards		70 years and upwards		80 years and upwards	
	W	C	W	C	W	C	W	C
1890	31.0	30.4	20.3	20.7	10.3	12.3	3.2	5.9
1900	34.5	24.2	25.1	14.5	12.4	7.4	3.9	3.0
1910	43.0	20.4	30.5	17.8	16.9	8.3	5.8	3.0
1920	47.9	28.6	34.1	16.5	17.8	8.9	6.0	4.4
1930	46.2	34.2	33.3	17.5	18.2	7.7	5.5	2.5
1935	63.6	41.2	46.2	20.5	25.2	8.4	7.6	2.9

1890, 1900, 1910, 1920, 1930 and 1935 are classified according to color. (Table I). In 1890, the negroes were on a par with the whites as to longevity; in fact, the percentage of deaths passed 50 and 31 per cent for the white and 30.4 per cent for the colored race. In this respect but little progress was made by the negroes during the years 1890-1930. While the percentage of deaths in the whites older than 50 years

showed a very steady gain during the interval of 1900 to 1920, the negroes for the same age



Graph 3. Percentage of total deaths of New Orleans, whites and colored, for ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards.

group registered a decided loss. (Graph 3). It was only in the year 1935 that the colored race showed an improvement. During the six years, 1930 to 1935, their increase was from 34.2 per cent to 41.2 per cent, while at the same time, for the whites it increased from 46.2 per cent to 63.6 per cent, or 22.4 per cent more for the whites than for the negroes. The discrepancy in longevity between the two races is eloquently shown during the period, 1900 to 1930, because in the year 1930, the per cent of deaths in the negroes who had exceeded their fiftieth year was approximately the same as the one for the whites in 1900, or 34.2 per cent for the former in 1930 and 34.5 per cent for the latter in 1900. The percentage of mortality for the whites passed 50 was 34.5 per cent in 1900, and 63.6 per cent in 1935, while that of the negroes was 24.2 per cent in 1900, and 42.1 per cent in 1935, a relative difference of 29.1 and 17 per cent, or an advantage of 12.1 per cent for the whites.

The age expectancy of New Orleans is unfavorably affected by the high death rate of the negroes because, while in 1935 the number of negroes approximated only 28 per cent of the total population, they were credited with 41.2 per cent of all the deaths occurring at the age of 50 and upwards.

The death rate of women before they have reached their half century mark is greater than that of men, but after they have passed that

TABLE II.

Percentage of total deaths of New Orleans, males and females, for the ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards.

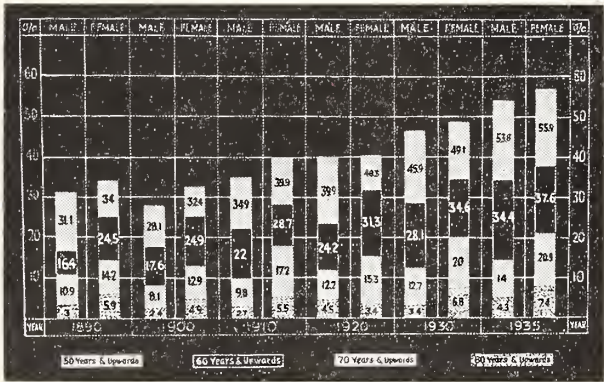
Years	50 years and upwards		60 years and upwards		70 years and upwards		80 years and upwards	
	M	F	M	F	M	F	M	F
1890	31.1	34.0	16.4	24.5	10.9	14.2	3.0	5.9
1900	28.1	32.4	17.6	24.9	8.1	12.9	2.4	4.9
1910	34.9	39.9	22.0	28.7	9.8	17.2	2.7	5.5
1920	39.9	40.3	24.2	31.3	12.2	15.3	4.5	3.4
1930	45.9	49.1	28.1	34.6	12.7	20.0	3.4	6.8
1935	53.6	55.9	34.4	37.6	14.0	20.9	4.3	7.4

age their life expectancy exceeds that of their mates. (Table II).

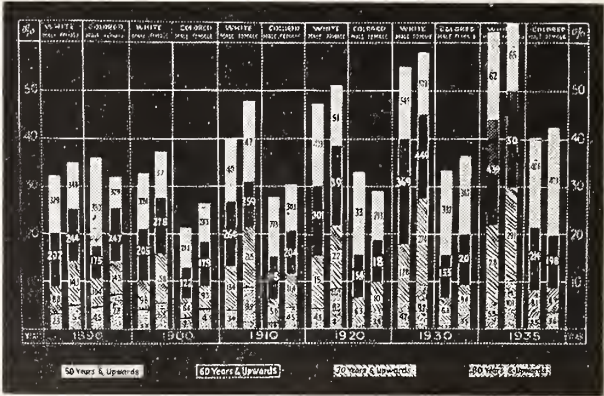
In 1890, 31.1 per cent and in 1935, 56.3 per cent of the respective total mortality in the male was above the age of 50; in the females

it was 34 and 55.9 per cent. This advantage on the part of the women has been consistently maintained during the past 45 years. (Graph 4).

The percentage of the total deaths for the ages of 50 and upward, 60 and upward, 70 and upward and 80 and upward, classified according to sex and color is shown in Graph 5. The high percentage of deaths occurring after the age of 50 in the whites compared to the



Graph 4. Percentage of total deaths of New Orleans, males and females, for ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards.



Graph 5. Percentage of total deaths of New Orleans for ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards; classified according to sex and color.

colored, both male and female, must be noted. The records for 1935 show that 63 per cent of the white males and 65 per cent of the white females, and only 40.5 per cent of the colored males and 42.1 per cent of the colored

TABLE III.

Percentage of total deaths of New Orleans for ages 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards, classified according to sex and color.

Years	50 years and upwards				60 years and upwards				70 years and upwards				80 years and upwards			
	White		Colored		White		Colored		White		Colored		White		Colored	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
1890	32.9	34.8	35.7	32.9	20.2	24.4	17.5	24.7	8.8	14.1	10.4	14.3	2.3	5.0	4.5	7.3
1900	32.4	37.0	21.1	26.3	20.5	27.8	12.2	17.9	9.8	15.8	5.6	9.3	3.3	5.5	2.0	4.0
1910	40.0	47.0	27.5	30.3	26.4	35.9	15.0	20.4	13.4	21.5	5.8	11.4	3.4	8.9	1.8	4.5
1920	47.3	51.0	33.0	29.3	30.1	39.0	15.4	18.0	15.0	22.0	6.3	10.0	4.3	8.3	1.1	3.8
1930	54.9	57.8	33.2	36.2	36.9	44.9	15.5	20.0	17.8	27.4	6.3	9.4	4.7	9.2	1.7	3.5
1935	62.0	65.0	40.6	42.1	43.9	50.0	21.4	19.8	21.8	29.1	8.1	8.9	5.5	10.1	2.5	3.6

females died at the age of 50 or older. This shows that the whites exceed considerably the colored in longevity. (Table III).

Dublin and Lotka* state that by the beginning of the present century the life expectancy of the United States had risen to about 49 years, and "since 1900 the improvement has been even faster. At the time of the last census, 1930, our expectation of life at birth here in the United States was just about 60 years, and according to our life table for the year 1933 we had definitely reached 61 years."

Two important factors have unfavorably affected the death rate and the longevity of New Orleans: One, the high death rate of, and the relatively large number of premature deaths among the negroes; the other, the great number of non-resident patients admitted to the Charity Hospital.

Although in 1935, the negroes approximated only 28 per cent of the total population of New Orleans, they contributed 46 per cent of the total number of deaths, of which only 41.2 per cent occurred at the age of 50 and upward.

Patients from every section of Louisiana, and even from neighboring states flock to the Charity Hospital for treatment. In 1935, for example, 33,598 resident and 34,354 non-resident patients were admitted in that institution. Forty per cent of all the deaths registered in New Orleans happened in that hospital. Because it is an indisputable fact that relatively the same proportion of deaths among the resident and non-resident patients occur there, it must be assumed that the mortality of New Orleans is increased thereby by at least 20 per cent. Also by the same process of deduction it may be stated that there is the same ratio of deaths there among those who have exceeded their fiftieth year. In 1935, 1229 patients, or 37.7 per cent, died in that institution passed the age of 50. It may therefore be estimated that approximately 614 of these deaths occurred among the non-resident patients. The small percentage of deaths, 50 years and upward, among the non-resident patients of the Charity Hospital, must of necessity lower the table of

rates of life expectancy among the residents of New Orleans.

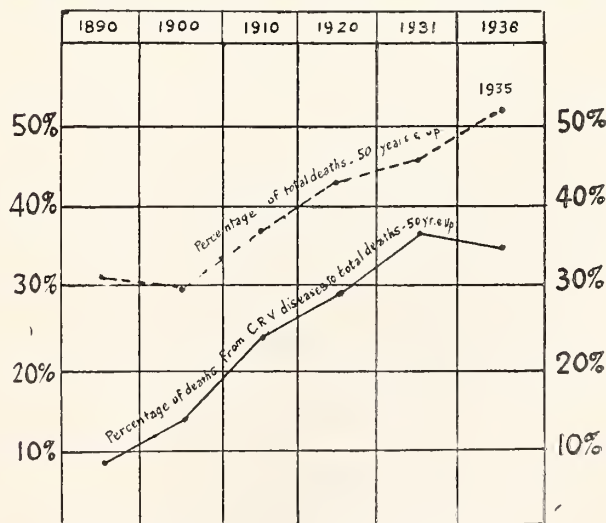
THE DEGENERATIVE DISEASES

It cannot be gainsaid that the augmentation in the so-called degenerative diseases must result directly from an increasing longevity. The more aged individuals there are in a community the greater will be the number to succumb from these maladies.

For the purpose of this survey the following diseases have been grouped under the heading of cardio-reno-vascular; cardiovascular; heart; mitral regurgitation; angina pectoris; coronary thrombosis; apoplexy; nephritis and arteriosclerosis.

Fifty thousand eight hundred and ninety-two death certificates were scrutinized. For the purpose of comparison, they were classified in the following chronologic order: 1880, 1890, 1900, 1910, 1920, 1931 and 1935. The average age of death was computed by dividing the total ages of death by the number of cases. They were tabulated in the following age groups: 49 years and under, and the ages of 50, 60, 70, 80 and upward.

In Graph 6 is exhibited the relation of deaths from cardio-reno-vascular diseases, occurring at the age of 50 and upward, to the total number of deaths from all causes for the same



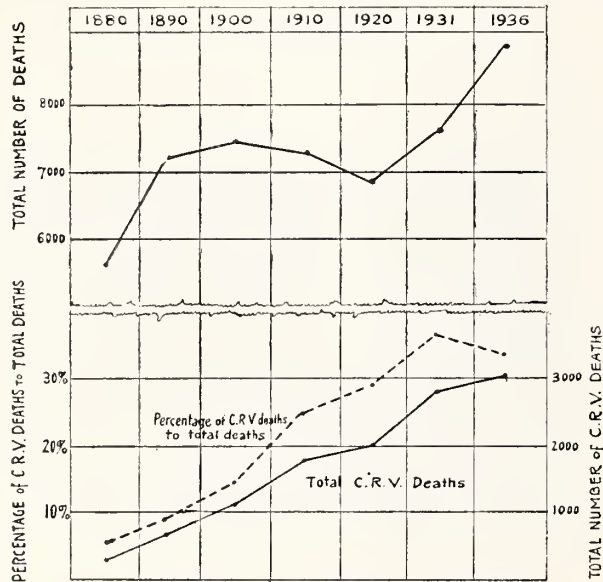
Graph 6. Relation of deaths 50 years and upwards of cardio-reno-vascular diseases to the total deaths occurring 50 years and upwards.

age group. A glance at the figures shows that the older a people die, the more numerous will be the victims of the cardio-reno-vascular diseases. The total deaths passed the age of 50

*Dublin, L. I., and Lotka, A. J.: Money value of life and life expectancy, *Am. J. Pub. Health*, 17:549, 1927.

increased from 32 per cent in 1890 to 48.9 per cent in 1931, and 52.5 per cent in 1935. The mortality from the cardio-reno-vascular diseases, for the same age group, grew from 9 per cent in 1890 to 36.8 per cent in 1931, and 34.8 per cent in 1936. The increase for the former was 20.5 per cent and for the latter 25.8 per cent.

The ratio of the total number of deaths to those caused by cardio-reno-vascular diseases is shown in Graph 7. The number of deaths registered in New Orleans for the years 1880 was 5,623; 1890-7,328; 1900-7,424; 1910-7,252;



Graph 7.

1920-6,869; 1931-7,674, and for 1936-8,812* Of these the cardio-reno-vascular diseases were the cause of 298 deaths in 1880, 674 in 1890; 1,042 in 1900; 1,791 in 1910; 1,991 in 1920; 2,822 in 1931, and 3,070 in 1936.* It is probable that because of better diagnostic methods many more of these diseases are recognized today than even was possible in comparatively recent years, yet this does not negate the fact that the longer a people live the more subject they are to their ravages.

In Table IV is given the relative percentage of deaths from the cardio-reno-vascular diseases occurring at the age of 50 and upward; 60 and upward; 70 and upward; and 80 and

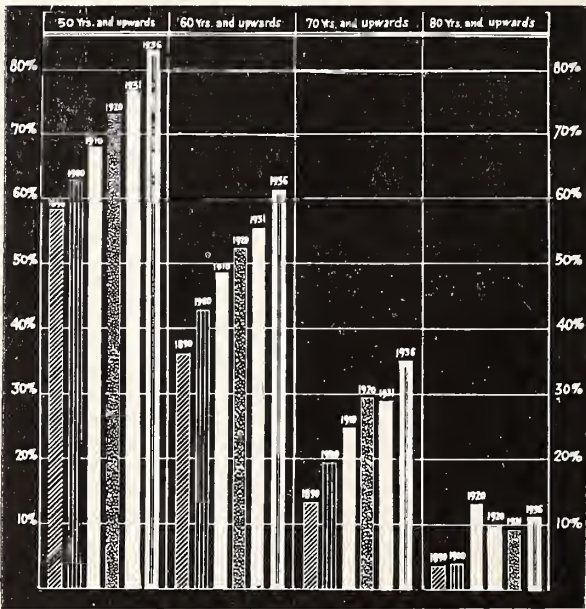
TABLE IV.

Percentage of deaths from cardio-reno-vascular diseases occurring previous to the age of 50, and the ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards.

	49 and below	50 and up- wards	60 and up- wards	70 and up- wards	80 and up- wards
Years					
1880	41.4	58.6	36.2	13.0	3.6
1890	37.0	63.0	44.2	21.6	5.2
1900	37.5	62.5	42.9	19.6	3.7
1910	32.4	67.6	48.7	25.0	13.2
1920	27.9	72.1	52.3	29.7	10.7
1931	23.6	76.4	54.7	29.2	9.3
1936	19.0	81.0	61.5	34.8	11.2

upward for the years 1880 to 1936. This table definitely shows that today the victims of these maladies die much older than ever before. For instance, the percentage of deaths from these diseases, in persons who had passed their half century mark, has increased 24.2 per cent, or from 56.6 per cent in 1880, to 81 per cent in 1936. For those 60 years and upward, 25.3 per cent, or 36.2 per cent in 1880 to 61.5 per cent in 1936; 70 years and upward, 21.8 per cent, or 13 per cent in 1880 to 34.8 in 1936; and 80 years and upward, 7.6 per cent, or 3.6 per cent in 1880 to 11.2 per cent in 1936.

In Graph 8 is given at a glance a good idea of the remarkable improvement made in this



Graph 8. Percentage of deaths from cardio-reno-vascular diseases occurring at the ages of 50 and upwards, 60 and upwards, 70 and upwards, 80 and upwards, for years 1890-1900-1910-1920-1931 and 1936.

*This great increase in 1936 evidently was due to the large number of cases of influenza.

respect during the past 56 years. Not only a greater proportion of these patients die older than before, but the average age of death has increased materially during the same period.

In Table V is given the average age of death

TABLE V.

Average age of death from diseases comprising the cardio-reno-vascular group.

Years	Cardio-vascular	Heart	Mitral regurg.	Angina pectoris	Coronary thrombosis	Apoplexy	Nephritis	Arterio-sclerosis
1880	-----	51.2	54.2	61.5	-----	60.0	51.4	-----
1890	48.0	57.6	56.0	58.6	-----	62.3	47.4	-----
1900	55.4	54.6	59.9	51.1	-----	63.0	48.7	64.0
1910	57.4	56.5	57.0	54.6	-----	57.9	53.1	72.2
1920	63.0	52.0	57.3	62.5	-----	62.0	53.3	73.8
1931	61.5	59.2	58.5	59.0	67.6	61.5	56.5	70.0
1936	66.8	64.9	60.0	60.7	63.0	65.9	55.6	76.3

from diseases comprising the cardio-reno-vascular group.

The sufferers from the cardiovascular diseases have shown a very definite gain in longevity. The average age of death from this cause was 48 years in 1890, while in 1936 it was 66.8 years, an increase of 18.8 years.

Under the classification of "heart" are included aortic valvular diseases, (but rarely mentioned as a cause of death), myocarditis, endocarditis, chronic vascular diseases, auricular fibrillation, heart diseases and other indefinite cardiac nomenclatures. Life has been extended in heart diseases 13.7 years. In 1880, the average age of death was 51.2 years, and in 1936, 64.9 years, a gain of 13.7 years.

Mitral regurgitation was frequently mentioned as a cause of death. Life was prolonged in this instance only 5.8 years. The average age of death was 54.2 in 1880 and 60 years in 1936.

Angina pectoris has shown but little improvement. The diagnosis of coronary thrombosis has only been made recently. The number of deaths from angina pectoris has diminished from 161 in 1931, to 48 in 1936, while

the fatalities from coronary thrombosis have increased from 36 deaths in 1931 to 315 in 1936. It can be surmised that in 1931 many deaths were ascribed to angina pectoris which may have been caused by coronary thrombosis, while in 1936 the reverse would hold true. At this time it is difficult to determine the extent of the mortality from coronary thrombosis because there is a possibility that the profession may be apt to magnify the frequency of that disease.

Patients die from apoplexy at an older age. The gain has been 5.9 years. In 1880, the average age of death was 60 years; in 1936 it was 65.9 years. It is very gratifying to note that the greatest increase was during the past six years, an increase of 4.4 years.

The little improvement shown by Bright's disease was to be expected, because nephritis, which is so frequently a sequela of infectious diseases, affects the young.

Arteriosclerosis has frequently been ascribed as the direct cause of death. Apparently victims of hardened arteries enjoy longer life. The average age of death from this condition was 64 years in 1900, and 76.3 years in 1936, a gain of 12.3 years. The greatest improvement in this respect took place in the past six years, for the statistics show that life was prolonged by 6.3 years in the interim.

Hypertensive diseases were classified with the cardiovascular diseases unless complicated with nephritis.

The percentage of deaths from diseases comprising the cardio-reno-vascular group to the total number of deaths from all causes is shown in Table VI. The incidence of mitral regurgitation has changed but slightly during the past 46 years, while that of the cardiovascular diseases, heart diseases, apoplexy and nephritis has greatly increased.

It is interesting to note that since the beginning of this century although there has been a marked increment in the percentage of deaths from the cardio-reno-vascular diseases, the average age of death from these causes has materially increased. For instance, the incidence of deaths from cardiovascular disease has increased 5.2 per cent, while the life expectancy of the sufferers of that malady has

*Sudden deaths most probably caused by coronary thrombosis were frequently ascribed to acute indigestion or acute Bright's disease.

TABLE VI.

Percentage of deaths from diseases comprising the cardio-reno-vascular group to the total number of deaths from all causes.

Years	Cardio-vascular	Heart	Mitral regurg.	Angina pectoria	Coronary thrombosis	Apoplexy	Arterio-sclerosis	Nephritis	Total C. R. V. Deaths
1890	-----	4.1	.73	-----	-----	1.9	-----	2.3	9.
1900	6.6	5.3	.9	-----	-----	1.9	.25	4.6	14.
1910	1.9	8.9	1.	.39	-----	3.7	1.1	7.5	24.7
1920	3.1	9.6	2.	.64	-----	5.3	1.6	6.5	29.
1931	8.5	13.5	1.1	2.	3.3	7.	.33	3.2	36.8
1936	5.8	9.7	.76	.54	3.5	7.5	.7	5.3	34.8

been extended 11.4 years. Heart disease, 5.6 per cent and 10.3 years; apoplexy, 2.5 per cent and 3.8 years; and nephritis, 1.7 per cent and 6.9 years. For the whole group 24.8 per cent and 12.3 years.

It is gratifying to note that in 56 years the percentage of heart deaths, in the age group of 10 to 49 years, has diminished from 41.4 per cent, or a gain of 22.4 per cent, while in the ages of 70 and upward it has increased from 13 to 34.8 per cent, or 20.8 per cent.

These statistics definitely prove that the expectancy of life in New Orleans has been enormously increased, not only because of the decrement in the mortality rate of infants, adolescents and in young adults, but as well in the increasing longevity after the fifth decade. This gain has not only manifested itself in the general mortality, but in that caused by the degenerative diseases.

It is a moot question whether this prolongation of life by sufferers of these degenerative conditions is due to their being acquired later in life than before, or to better therapeutic measures.

The story which these statistics tell is certainly not what would be expected after listening to the doleful prophets of decreasing longevity. These statistics definitely prove that the expectation of life in New Orleans has been enormously increased, not only because of the greatly lowered mortality in infancy, in adolescence and at maturity, but as well beyond middle age. This gain has not only manifested itself in the general mortality, but in the death rate of degenerative diseases.

Dublin and Lotka* state that "Without going into detail, we may recall the familiar fact that the greatest reductions in mortality have taken place in infancy, so that the gain in expectation of life is greatest at birth. However, there are gains in childhood and adolescence and maturity, although one of the facts which we have to record with regret, is that from mid life on, gains have in recent years been but light, and in some recent decades the expectation of life at these ages has actually suffered a set back."

SUMMARY

It may be definitely stated that in New Orleans the duration of life has not been curtailed by the greatly increasing number of deaths from the degenerative group.

The degenerative conditions, including diabetes, have increased in 34 years (1900 to 1934) 54 per cent, according to the United States Government Mortality Statistics. In New Orleans, deaths from that group of diseases, exclusive of diabetes, have increased in 36 years, (1900 to 1936) from 1042 to 3070, or nearly 300 per cent.

The negroes, because of hard work, exposure, improper housing, ignorance of the principles of sanitation, the greater prevalence of syphilis among them, and their greater susceptibility to the infectious diseases, are more subject to the degenerative diseases. This is not due to racial or inherited tendencies. They

*Dublin, L. I., and Lotka, A. J.: Money value of life and life expectancy, *Am. J. Pub. Health*, 17:549, 1927.

are the victims of their environment and ignorance. Amelioration in this respect is already taking place, and it may be safely predicted that in a few years that they will enjoy longer life.

It must be deduced that the "degenerative" conditions will increase. They are the terminal diseases of the elderly, and the more a population ages the more the deaths from them will become relatively preponderant.

The discovery of a cure, or a prophylaxis for cancer, or even more accurate methods for its earlier diagnosis will still further materially extend life expectancy. The eradication of the infectious diseases and a better control of syphilis will to a large extent reduce the incidence of, and retard the premature deaths from the cardio-nephro-vascular diseases.

Compulsory health measures have accomplished to a great extent their aim. Now we must rely more and more on the education of the masses in health matters. The public must be taught how to protect itself. People must be educated, when young, how to live so that they may attain old age. This is one of the problems which confront the medical profession today.

DISCUSSION

Dr. A. A. Herold (Shreveport): As Dr. Fossier says, one of the greatest causes for death from degenerative diseases is the fact that we know more about pediatric diseases. Thanks to the pediatricians and internists, infants, children, and young adults live longer than heretofore. Therefore, the people have to die of something and they fall back on these cardio-renal-vascular diseases.

I think it is to be regretted that our nomenclature is not more definite. I notice in "Causes of Death," the only valvular disease which is specified is mitral regurgitation. We know they might have aortic insufficiency and other valvular diseases, and why mitral regurgitation should be put in a class by itself, I cannot see.

Another cause for confusion is the fact that a great many doctors, I must admit I am confused, hardly know what to put as the cause of death on a death certificate. You want to state first the principal cause of death, and then you want to state the predisposing or complicating disease, which is sometimes rather confusing. I think in many cases the wrong disease is specified as the cause of death. In cardiovascular disease, where a patient has a simple attack of influenza, the

cardiovascular disease is the cause of death, and the influenza is the contributing factor. We see the influenza given as the cause of death, with cardiovascular disease and Bright's disease as contributing causes.

Another interesting feature of this, from a selfish standpoint, is the fact that more and more doctors are victims of cardiovascular-renal disease than ever before. For years I have compiled statistics from the Journal of the American Medical Association every week as it comes out, to see what percentage of the doctors who die, where the cause of death is stated, have died of cardiac disease alone. Sometimes it shows as high as 35 or 40 per cent, including accidents, homicides, and so forth. It is a point of interest to us personally from a selfish standpoint.

The lesson I get from Dr. Fossier's paper is that we should do our best to combat the degenerative diseases and try to prolong our lives and our patients' lives. I think we have started on that track by urging periodic health examinations, because very frequently the secret of prolonged life is in detecting these diseases early.

As Dr. Fossier says, when we get to know more about stopping cancer and can do more about the syphilis problem, especially among the negro, the proportion of these degenerative diseases will be bound to rise, because they will be about the only ones left, except accidental deaths.

Dr. R. McG. Carruth (New Roads): This question has been coming up now for a number of years, and I presume it will continue to be a cause for a perennial discussion. It is always interesting.

Everybody, or nearly everybody, wants to live as long as he can enjoy good health. I was amused at my friend, Dr. Herold, when he said that people have to die of something anyhow. I do not know about that. It is a question whether they have to die or not.

When I was about 70 years of age, possibly you consider this something of a joke, I organized or said that I had organized or was going to organize a Methuselah Club, not that you had to live 969 years, but there was no reason why a man should die. Every few years we get some new fads, and I have followed some of those fads myself from the time I was forty-five years of age. I tried experiments on myself, the no-breakfast plan, and the no-meat plan and gave them all up—but I am not discussing diets.

The last book on diet I bought contained this expression from Sir Arbuthnot Lane, who was over here delivering lectures for a while at Johns Hopkins, I think: "No man dies a natural death."

Dr. Raymond Pearl sent me one of his papers,

"The Aging of the Human Brain." He said he had autopsied brains from the fetus in utero in all kinds of animals, monkeys, man, and so forth, and the oldest he had ever autopsied was an old woman 117 years old. You remember old Agar Asa who claimed to be 156 years of age. Doctor Pearl said these cases could not be authenticated; that he found the same plaques, the same conditions of degeneration in that old woman's brain that he found in a man of forty or a woman of fifty, sixty, or seventy years, generally tuberculosis, syphilis and alcoholism. So that they do die of something; they do not die just of old age.

I look for the time to come when the question will be what shall we do with these old people? I spent a couple of months in New Orleans recently, and I noticed more old men on the street, and more stout women, commonly called fat women, than I ever saw in the days of my youth. As I come to these conventions year after year, I notice a great many of my confreres are becoming bald. I notice they seem to be in good health, but I notice more old men and fewer young men in the groups that I meet today than I did years ago, and I have been coming a good while. If we do not dig our graves with our teeth, there is no reason why we should not extend human life very, very far; maybe too far, and men will become a burden. There was a time among some of the ancient races, and some of the savages today, when they put the old people to death because they had become a burden to the community. I do not think this will ever happen in a civilized, Christian country, but we may find ourselves burdened by an excess of old people.

Now as to what all this has to do with the increases in the proportion of cancer cases, I do not know, but we should naturally suppose that as more people reach the so-called "cancer age," it will naturally increase the incidence of cancer. But Doctor Lane thinks he has solved for himself the diet question as he said "I shall never die of cancer," and I am inclined to agree with him.

Dr. A. E. Fossier (In conclusion): Dr. Carruth said something that struck me very forcibly, and that is we have more old people today than we ever had before. I remember when I was a child, everybody looked up to a man of my age as a patriarch, and with reverence. They thought he was very old. He would probably be in his fifties, and he would die around the fifties.

When I was a child, only about 7 or 8 per cent of all the people died above the age of 50. The other 93 or 94 per cent died younger than 50. Being interested in that subject and looking at some of the tombstones in New Orleans, I remember some of the old people who made an impression with their top hats, their redingotes, their beards,

their aged appearance and venerable looks. I found they all died comparatively young. One of the reasons is that not so very long ago we were plague infested. Yellow fever, small pox, diphtheria and other infectious and contagious diseases were killing many of our children and young adults. The eradication of these diseases has contributed greatly to our longevity. The figures are amazing.

In view of these facts, the mortality tables of life insurance companies need revision because the "American Experience Table of Mortality" was developed in 1868, and the "American Men Table of Mortality" was published in 1918, and was based on the mortality experience of the leading life insurance companies of America and Canada between 1900 and 1915. Even today the "American Experience Table of Mortality" is the basis of insurance rate computation by a majority of the life insurance companies.

SOME COMMON CONDITIONS AFFECTING THE HEART*

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In choosing this subject and discussing it as I will, I know that this presentation will seem elementary; however, I feel that while there is nothing new any of us will learn from it, we will refresh our memories with some of the fundamentals of the practice of medicine which are occasionally overlooked or forgotten.

Reviewing the case records in my office, it was noted that a large percentage of patients complained of weakness, tachycardia, fatigue and general "let down" feeling. This usually dated back to a recent mild acute infection or an operative procedure. The patient was questioned carefully as to postfebrile and postoperative care, and it was noted that the care in the convalescent stage was definitely inadequate.

Heart disease is definitely on the increase and is occupying a paramount place as a cause of death and disability. Emerson¹ estimates that 1 per cent of the population constitutes the total of heart patients and that the cost

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

of nursing and medical care for a year is between \$89,000,000 and \$100,000,000. This estimate is based on approximately 1,150,000 cardiac patients. There is an appalling loss of earning power due to heart disease and yearly this is increasing. Emerson estimates that this loss to the present generation based on the 1928 population would be \$1,502,198,355.00. Therefore, it behooves each one of us to give this condition deep thought and consider all factors that may be responsible for an unnecessary increase in this dreaded disease.

ETIOLOGY

In reviewing the causes of chronic myocarditis in textbooks, it is noted that the disease is traceable to one or more of the following factors: an excess in the use of alcohol or tobacco, lead poisoning, gout, rheumatism, diabetes, chronic nephritis, malaria and syphilis. "There is a group of cases due to primary foci of infections in some other organ than the heart, such as teeth, tonsils or gallbladder."

Herrmann⁵ states, "Acute respiratory infections may precipitate symptoms (myocarditis) in one previously apparently sound. In general, however, the acute myocardial degeneration is much less serious and stops with the subsidence of the febrile or toxemic state. It is thus self limited, lasting for a brief time only and often presents no definite signs or symptoms. There is a tendency to prompt and complete recovery in all but a few instances of the usual infections."

Harlow Brooks⁶ states, "Perhaps most important of all, since it is probably the most common of all and, in many instances, among the most insidious and unexpected, are the infections. Certain of them are more prone to invite heart failure than others, such as, for example, diphtheria, influenza, pneumonia, typhoid fever, and others."

I wish to call to mind the effect that the common acute infections, such as influenza, tonsillitis, pneumonia, typhoid and other febrile diseases have on the heart. In these diseases it has been demonstrated that there is a mild to moderate myocardial damage and that chemical as well as microscopic changes take place in the heart muscle cell.

It is well known that during the febrile

state, due to the increased metabolism, there is an expected rise in the heart rate of eight to ten beats per degree of increased temperature. This, in itself, means more work for the heart muscle. It is expected that the systolic blood pressure will fall, thus producing a diminution of the circulation in the coronary vessels.

The increased demand on the heart for more work and the decrease in the coronary flow alone, without considering the effects of the toxins of the specific disease, might well account for myocardial damage. In reviewing the histories of some of my cases of chronic myocarditis as well as the histories of some cases that terminated fatally of an apparently mild acute infection, my attention has been focused more and more on the past history of acute and chronic infections as a cause of the myocardial failure. I have carefully questioned the patient as to his care throughout the disease and particularly the care through the convalescence. In general, it was noted that in the majority of mild or moderately severe infections, he was seen a few times and occasionally not at all by his physician during the febrile state and not at all through his convalescence.

The acute infectious diseases such as have been mentioned, I believe, play a large part in laying the foundation for future cardiac failure. We are all too prone to consider the disease as one producing fever and general malaise and that the patient is well when the temperature is normal and the focal manifestations of the disease have subsided. If these cases were followed carefully, it would be noted in many that there was a lasting drop in blood pressure and an increase in heart rate for many weeks or many months following a so-called mild acute infection.

SYMPTOMS

The signs and symptoms of myocardial injury frequently do not manifest themselves until the convalescence. That is when the patient begins to sit up, walk or return to work. The heart muscles have been weakened but an undue feeling of weakness, fatigue, and especially shortness of breath or breathlessness, accelerated pulse and fall in blood pressure on slight exertion must be viewed with suspicion of be-

ginning myocardial failure. Observation and proper treatment through the convalescence is as important as through the febrile state of the disease.

It is a common occurrence for the physician to be asked by the patient after his temperature has reached normal, "When can I get up and when can I go back to work?" This question should not be answered carelessly or hurriedly, but the matter of observation through his convalescence, if there are any of the well-known signs of myocardial weakness present, should be discussed at length with the patient. He should be made to realize that care through the convalescence will give his myocardium the best chance for its return to normal.

PROGNOSIS

As physicians we do not wish to make the patient a neurotic or heart conscious; neither do we wish to subject him, through our carelessness, to an early heart failure. In young individuals whose myocardia have a great reserve, acute infections are overcome easily, leaving little or no demonstrable heart muscle damage. It is hard then to make the patient or his family realize the advantages of a slow, cautious convalescence. We must look forward 10 or 20 years later when he is again suffering from an acute or chronic infection. He then will depend on his myocardium to carry him through and its failure in the latter infection may be due to the irreparable damage or loss of cardiac reserve as a result of improper convalescence or an infection in youth.

It must be carefully considered that the young girl with influenza or other febrile diseases, may in years to come depend upon her myocardium to carry her through pregnancies and diseases. Therefore, another reason for careful, guided convalescence in youth is evident.

MANAGEMENT OF PATIENTS

I wish to mention a routine that I have found very satisfactory in handling the acute infectious diseases as well as other diseases. In addition to specific or routine treatment, record is made of the pulse, blood pressure in all cases and, when practical, a complete blood picture consisting of the red cell count and hemoglobin at the onset of the disease. This is checked from time to time throughout

the febrile state and such medication as is indicated is given. After the febrile state is passed, especially in the middle-aged class, convalescence is discussed with the patient at length, convincing him that he should take care of his heart. He is instructed to sit up and note any undue rise in pulse rate or undue fatigue. A normal increase of 10 beats is expected and to sit up until tired, but not fatigued, is all right. If he tolerates this well he is allowed to walk slowly and observe his pulse. His blood pressure and blood count are taken at intervals and, as the pulse, blood pressure and red cell count and hemoglobin approach normal, he is allowed to return to light work and gradually his normal routine.

Following the usual illnesses there is, in most cases, a secondary anemia. This, in itself, will produce inadequate nourishment for the heart and should be given special attention. The anemia can usually be overcome by simple, usual remedies.

This routine, I believe, will prevent overtaxing a weakened heart muscle and prevent any unnecessary permanent damage. It will also show many cases of mild myocarditis which will never fully return to normal. With this information, the physician can advise the patient competently as to his exercise and mode of living. This should prevent, for many years, the onset of the inevitable cardiac circulatory failure.

The diet in the febrile and convalescent state should be of high caloric value. This is demonstrated by Porter and Bloom³ in their review of the heart in typhoid fever. They state, "A study of the literature dealing with typhoid fever prior to the use of high caloric diets indicates that the toxemia of the disease was much greater and that serious cardiovascular complications were common. One ventures the conclusion that the reduction in the serious circulatory complications may be attributed to the character of the diet now employed in the care of typhoid patients."

CONCLUSIONS

Many years of useful life can be added by early recognition and proper management of a weakening heart. The pulse and blood pressure readings should be taken at frequent in-

tervals during any illness and especially through the convalescence. The heart may be normal at the onset of acute infections, but may be unnecessarily permanently damaged by carelessness during the period of convalescence.

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DISCUSSION

Dr. S. Chaille Jamison (New Orleans): Dr. Hunter has brought up some controversial points that most of us do not know how to solve satisfactorily. First of all, when treating infectious disease, or when called in to see surgical cases, or when called in by surgical friends to see those who are subject to trauma, it is necessary to determine the state of the vascular system.

I believe that the poisoning seen in the acute diseases, postoperative cases, or traumatic cases, is not to be attributed necessarily to degeneration of the myocardium. There is usually a question of vascular failure, and if the blood pressure and pulse rate were observed a great deal more than auscultation of the heart, a truer picture would be obtained. Treatment must be directed toward peripheral vascular failure and not directed toward the heart.

That is entirely a different question from the one Dr. Hunter has brought up, which is the question of how much damage is done by mild infections to the intrinsic structure of the heart. It is a question that I have never been able to solve. I have never been able to assure myself if a man had grippe, typhoid, or some other acute infectious disease, as to how much his heart muscle is damaged.

At the autopsy table we do not get very much more help than in the clinic. The pathologist talks about fatty degeneration and albuminous degeneration, and he shows us a heart muscle that is a little flabby. He does not show us other muscles in the body at the same time to compare with that point. Actually, the pathologist does not know.

Some help may be obtained from electrocardiographic studies. Statistics show there are changes

in electrocardiographic tracings lasting for weeks after the infectious disease, when there are no other signs. Whether or not this is to be taken as a sign of heart disease, and especially heart muscle disease, I again do not know, because I can show you many men, walking around and leading active lives without any signs of failure, but with very deformed electrocardiograms.

I think we have to steer a very unsatisfactory course. In the first place, we have to be careful in these days not to make our patients heart conscious. The person who is heart conscious is a worse nuisance to his doctor than a man with real heart disease. Following what is called grippe or influenza, all of us must be impressed with the frequency with which we get the story, "Doctor, I was perfectly well until I had the flu, and since that time I have been a little short of breath. I have been conscious of my heart beat. I am weak, and I am feeling badly." I think we should keep these patients in bed as long as the heart rate is too fast, as long as the blood pressure is too low, as long as the sounds are more valvular than they are muscular. My own course has been, and it has not been very successful because patients will not pay any attention, to insist on at least a week's rest in bed following an infectious disease. I am very much inclined to the idea that in the young group with intact heart muscles the damage is not very great; the older group of men and women who have had the wear and tear and the damage of years to their hearts, the least infection is very likely to be fraught with danger to them.

We are entirely too careless with many of the mild infections with regard to the heart. If I could, I would see every such case at least twice for the three weeks following the acute infection. I would have an electrocardiogram, and I would make him take two days out of the week for rest in bed.

Dr. G. F. Fasting (New Orleans): I want to keep the heart in mind both with regard to acute infections and these low grade silent infections. In the medical literature of late, there has appeared a certain amount of information which I think in a few years' time will have quite a bearing on the question of cardiac function. Continued life of the heart does not depend exclusively on how the heart works at a given moment, nor on the actual damage that may be present.

It does appear, from work in acute infectious processes, that the adrenals are severely damaged and it appears evident in the so-called low grade infections with low grade fever that similar damage is produced. In so-called grippe and influenza in which sequels may border on encephalitis, one characteristic feature is a hypotension, and I

believe this can be traced to a toxic effect on the adrenals.

In the work that is being published on cortical extract, we are learning now how vital this cortex is in Addison's disease. We know also that if the sodium potassium balance is not right death may follow immediately.

It appears to me that we should keep in mind these low grade silent infections. While they have no obvious pain, and while they are most insidious, if it is true that they work by poisoning the adrenal cortex, indirectly the damaged cortex is going to tell its story some day on the heart. And it may readily happen that at the autopsy table the pathologist may not be able to tell why the patient died.

Dr. Melville W. Hunter (In closing): It was not my intention to put down the acute infectious diseases as primary causes of the beginning of a myocarditis, but to try to bring out that possibly they did have some influence on an already degenerated heart. The heart wears out through the wear and tear of work, of sleep, of pleasure, and of what not. It also must wear out partly due to the general infections that we have to carry through.

I do believe we have all been negligent in observing our patients during their convalescent period. I do believe we can educate the public to be observed by their physicians through the convalescent period. If we do, we will have added something to their longevity. I may be all wrong, but I think we can.

I had the opportunity of seeing a man who went through lobar pneumonia. On the fourth or fifth day, after he was fever free, he got up. He had violent anginal pains, went back to bed and stayed two days, and again had violent anginal pains. We took a curve on him, and at that time he had an intermittent auricular flutter. It was a beautiful curve; it came and went, the normal curve and then the flutter. I was feeling his pulse all the time and thought it was regular, and then I saw the curve. That man was seen every three weeks for three months. The cardiogram has straightened out to normal, and his blood pressure has come up. It took three attacks of anginal pains to convince him that his physician was probably right.

My own father had the flu; he died twelve months later as a result of hypotension, myocarditis and chronic nephritis following the flu. With that in view, I have thought the flu laid the foundation for some of the deaths in the future.

I have had another group of men who suffered more or less severe flu infections. They were left with a low blood pressure and tachycardia.

They did not take care of themselves and continued to work hard, long hours. The following year, one man in particular suffered a mild flu, with temperature from 99° to 100°. He was not sick at all. On the third day of that disease he suffered a vascular collapse, whether cardiac or peripheral makes no difference, and died. I believe that man would have had a better chance if he had been properly taken care of through the convalescence of the disease the year previously.

MODERN TRENDS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS*

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NEW YORK, N. Y.

INTRODUCTION

The term "modern" used in connection with syphilis has certain connotations peculiar to that subject which I should like to touch upon for a moment. If we are to believe the evidence accumulating in the form of syphilitic bones uncovered in various parts of the Western hemisphere, syphilis as a disease is at least as old as the history of man on this continent. Syphilis as a definite entity did not become generally recognized throughout Europe until after Columbus' return to Spain from his first voyage to the West Indies. It took four hundred years after that for "modern" diagnosis and treatment to make their appearance, in the discovery of the Wassermann reaction, the identification of the causative organism, and the perfecting of a specific drug, arsphenamine, to displace that old cure-all mercury—all these in the early 1900's. This means that physicians now in their forties were the first to have the opportunity of acquiring the new knowledge during their medical training, if indeed their medical schools were advanced enough to include it. Like most ultra-modern commodities, the new knowledge of the early 1900's was full of imperfections. Treatment especially was a matter of trial and error, and the list of patients who were cured of their syphilis but died of the cure would probably be appalling if known.

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In view of these facts, it is not surprising that the general practitioner now in his prime has for the most part looked with a wary eye upon "modern" methods of dealing with syphilis. Between mercury, respectably established for four hundred years, and arsphenamine with less than thirty to its credit, while bismuth has barely fifteen, his choice has been only natural. If he tries an arsphenamine, he is likely to choose neoarsphenamine, because it has been lauded as less toxic than old arsphenamine, the original "606" and he can make up for its therapeutic shortcomings by giving larger doses, or so the literature has led him to believe. He quite properly does not wish to try every new remedy on his patients merely because it is "modern". He is waiting for time and experience, that is, other peoples' experience, to show him. And you cannot blame him.

Meanwhile the lowly spirochete, in spite of occasional setbacks, threatens to inherit the earth. Until now, the attitude of the general public toward syphilis has been, mildly speaking, Victorian. In what are usually referred to as the "best circles", it has been antediluvian. It is a curious anomaly that in an era characterized by the almost universal throwing off of inhibitions in other fields, the very subject of syphilis should remain consistently taboo. It is only now when the disease has become so widespread as to constitute a public health menace of the first magnitude that the problem is being forced into the open. The physician may no longer pursue his peace-at-any-price policy. He must arm with the best weapons available and adopt militant tactics. The problem before us is "How?"

Those of you who happened to be present in Washington a few months ago must have been impressed by the extensive program launched for the control of venereal disease in the United States, and by the tremendous enthusiasm with which it was received. Nearly a thousand public health officers and others interested in the problem assembled there from all parts of the country. Such a meeting is significant to all of us, not only because it offers opportunities for the interchange of factual information, but also because it serves as a clearing house for the attitudes of public health

agencies, private practitioners, and lay workers such as the social service groups. One could hardly come away from such a meeting without a conviction that there is important work for all, that there is no essential conflict in aim, and that intelligent cooperation of all groups will be to our mutual advantage.

Let us now examine the problem in the concrete. The problem, I assume we would all agree, is to eradicate syphilis. To do this, the most efficient of modern methods must be selected. Which of these methods may best be administered by public health groups and which by private practitioners we shall examine in a moment.

MAKING THE PUBLIC SYPHILIS-CONSCIOUS

On this first line of attack I shall touch only briefly. The public must be made syphilis-conscious as it has been made tuberculosis-conscious and cancer-conscious. If, as the available records indicate, over 600,000 fresh cases of syphilis are reported annually in this country, there are at least as many more which never reach a physician, and these latter, of course, constitute the greater menace. While it may with some justice be said that this is primarily a public health problem, it is one in which all practitioners of medicine must assume a share of responsibility. I would recommend hearty support of the stand taken by the American Medical Association in a recent issue of the *Journal* that authoritative information on the subject of syphilis be given to the general public; and it is certainly much better that it come from physicians themselves than that it be left to lay popularizers whose mixture of misinformation and pseudo-science often does more harm than good. Press and radio have been curiously backward in this field. It was only last year that Dr. Parran, then Commissioner of Health for the State of New York, was refused permission to broadcast an informative talk on syphilis, and until recently it might almost pass for a typographical oversight if the word "syphilis" was found printed in a daily newspaper. During the past winter the taboo has been lifted somewhat. One of the large metropolitan dailies ran a series of articles on syphilis, and occasional articles are appearing with increasing frequency in the

better magazines of general circulation. The campaign must be continued until all persons who would know enough to consult a physician for a lump in the breast or a productive cough associated with night sweats and loss of weight, will also suspect an innocent-looking sore on the lip or the genitals' as the possible forerunner of syphilis.

Ignorance is prevalent in all classes of society. Not long ago eight fresh cases of syphilis among young people in one locality were traced to a kissing game at a party attended by a young man of good family who had a sore on his lip. The sore was a chancre. The young people might easily have been your children or your friends' children. For syphilis, much popular opinion to the contrary, is no respecter of persons.

THE CHOICE OF MEDICAL CARE

I have said that the first modern line of attack is to make the public syphilis-conscious. A man is not likely to consult his doctor for a trifling lesion which may cause him little or no inconvenience unless he has reason to think it may be the forerunner of a more serious ailment. He is still less likely to take precautions against infecting others. But let us assume for the moment that our man is sufficiently informed to consult a doctor for that suspicious sore or rash. At this point there is a tendency for the members of the old guard to become slightly hysterical. It is argued that as the Public Health Service expands its program and more clinic facilities are provided for the treatment of syphilis, patients will gravitate toward these and away from the private practitioner. I propose to show that what happens here lies very largely in the hands of the practitioners themselves. It is of course understood that indigent and border-line cases must be treated at public expense, either in clinics or privately, the physician being supplied with free drugs for non-paying cases. The well-to-do on the other hand will probably consult the specialist. In between these economic extremes lies the largest group of all, those who are able and willing to pay if they can be made to realize the importance to themselves of securing at the outset competent medical service combined with privacy and the confi-

dential interest of their family physician. There is no doubt in my mind that any good general practitioner with a practical working knowledge of the diagnosis and treatment of syphilis can offer better service than any which a Public Health Clinic is likely to be able to supply for some time to come. It is when the middle-class patient finds his physician insufficiently informed or incompetent to diagnose and treat syphilis that he will gravitate toward the public clinic, even though he may be able to manage private fees, if not unreasonably high.

MODERN METHODS OF DIAGNOSIS

Suppose we consider a concrete example. Mr. Jones, let us say, wakes up one morning to discover a trivial-looking sore on the penis. At this stage he may not be aware of any other symptoms, except possibly a guilty conscience. He is just sufficiently informed, however, to drop in to Dr. —'s office on his way to work. The doctor is not impressed. He applies an antiseptic ointment and tells him to come back if the sore fails to heal. Jones does come back, this time with enlarged inguinal glands in addition to the sore. He may even have a touch of sore throat, which he attributes to a cold coming on. But he indignantly denies any exposure to syphilis, providing the doctor is bold enough to inquire; and the sore is diagnosed as a chancroid. When Jones comes back for the third time, some two or three months later, he has all but forgotten the sore, which healed in a month or so as the doctor said it would. He is now bothered with a rash, it does not itch, but it is unsightly, and his wife is worried about it. The doctor pronounces it a "toxic eruption", prescribes a diet and soothing lotions, and tells him not to worry. As an afterthought, Jones may mention that he has been feeling rather shiftless of late, headaches, lack of appetite, and his hair seems to be coming out rather fast. So the doctor gives him a tonic for good measure.

So far, several golden opportunities have been lost. In the first place, contrary to the prevailing legal principle, a patient suspected of syphilis is guilty until he has been proved innocent. The proof lies first of all, in a clinical differentiation between the initial lesion of syphilis and that of chancroid and other lesions.

which show a predilection for the genital region.

The syphilitic origin of the lesion is often confirmed by a darkfield examination of serum from the lesion. This is an invaluable aid to diagnosis in the first few weeks, for the blood does not as a rule give a positive reaction until several weeks after the first appearance of the lesion.

This early diagnosis is of vital importance to the patient for it has been demonstrated that the highest percentage of cures in syphilis has been obtained in patients whose treatment was begun in the seronegative primary stage, the next highest in the seropositive primary stage, that is to say, when the Wassermann has become frankly positive but before the appearance of a skin eruption, and the lowest percentage of cures when treatment is not begun until a rash has appeared.

Jones' doctor missed another golden opportunity when he ignored the patient's enlarged glands. For when serum from the chancre itself fails to show the presence of spirochetes (possibly because the patient has applied some local disinfectant), a darkfield examination of material obtained from puncture of the gland draining the site of the lesion will often disclose *Spirochaeta pallida*.

When Jones appeared with what his doctor was pleased to call a "toxic eruption" (or perhaps he only called it "eczema", or "pityriasis rosea") he had three kinds of evidence on which to judge his case: (1) the history of a penile sore followed first by enlarged inguinal glands and then after several months' interval by an eruption accompanied, if the case be typical, by other symptoms, such as sore throat, hoarseness, headaches, and general fatigue, loss of appetite and falling of hair; (2) the character of the syphilitic eruption, as distinguished from other skin rashes, and (3) the Wassermann reaction, which is positive in all but a minute fraction of patients with florid secondary manifestations.

The physician must also reckon with the possibility that other skin ailments may exist concomitantly with a syphilitic rash or with a positive Wassermann and yet be quite independent of syphilis. In this matter of the differentiation of the syphilitic eruption from other skin

conditions the physician has only himself to depend upon. In the matter of darkfield examinations for spirochetes and in the Wassermann test, however, he has the right to assistance from some centralized agency, such as the laboratory of the local hospital or of the nearest Public Health Service. It is too much to expect of the general practitioner that he become an expert in the darkfield and Wassermann procedures, when a laboratory equipped to perform such tests routinely can do them much more satisfactorily and at less cost per patient. New York State has developed an excellent laboratory system, comprising over 70 laboratories approved by the State Department of Health for serologic and other examinations of specimens for the diagnosis of syphilis. These laboratories are all maintained wholly or in part by public funds and render service without charge. Other states provide similar service in varying degrees, and it is to be hoped that with the aid of funds made available by the Social Security Act these services will be expanded. Darkfield examinations for private patients are provided by 21 states, according to figures cited at the recent conference in Washington. Mailing-kits are available for sending specimens for darkfield examination, and these can be used even by physicians in outlying districts, since it has been shown that when certain simple precautions are observed, spirochetes remain motile in such containers for as long as five days. (See *Am. J. Pub. Health* 24:452 and 629, May and June 1934).

THE WASSERMANN REACTION

In regard to interpreting serologic tests, the problem of the diagnostic Wassermann is somewhat different from that of the test made from time to time as a check on the results of treatment. Except in a very few other diseases, notably yaws, which can usually be ruled out by other means, a strongly positive Wassermann report in conjunction with the characteristic clinical symptoms and a history of recent exposure, means syphilis. If the Wassermann reaction is only weakly positive, however, or if despite strongly positive Wassermann either history or clinical symptoms be lacking or contradictory, then a diagnosis of syphilis is premature. Blood samples should be sent to at

least two different laboratories, and one or more of the flocculation tests, preferably the Kahn or Kline, should be made to supplement the complement-fixation test. In very doubtful cases, several sets of tests, taken at intervals of a few days to a few weeks, may be indicated, to allow for some temporary condition of the patient's blood, or for the occasional variation in laboratory materials and procedure. It is unfair to the patient to condemn him to the nervous and financial strain of a lengthy course of treatment until the diagnosis has been made with the highest degree of certainty that modern methods can provide.

MODERN METHODS OF TREATMENT

(A). *Choice of Drug*: Let us assume now that the diagnosis of early syphilis has been definitely established and the physician is ready to begin treatment. The older man, for reasons already touched upon, will be tempted to give mercury, often mercury by mouth, together with potassium iodide and let it go at that. Others, perhaps impressed with the flood of literature on bismuth during the 1920's, may "go modern" to the extent of trying one of the innumerable bismuth preparations on the market, beguiled by the comparative harmlessness of bismuth as compared with the arsenicals, and the large doses which he may administer with impunity. Those physicians who pride themselves on having passed the horse-and-buggy stage of therapy but who are still mindful of the train of toxic after-effects which the early arsphenamine preparations left in their wake, will compromise on neoarsphenamine. The majority of so-called "modern" practitioners in this country today are using neoarsphenamine in the treatment of early syphilis.

I think there is already at hand sufficient evidence to indicate that before long neoarsphenamine will be as outmoded as mercury for attacking a fresh syphilitic infection. The one great advantage which has been claimed for neoarsphenamine is that it is less toxic than the original arsphenamine preparation, and therefore larger doses can be given with comparative safety.

In the first place, even the most ardent proponents of neoarsphenamine admit that its de-

creased toxicity has been achieved at the price of decreased therapeutic efficacy. It contains only about two-thirds the amount of metallic arsenic which old arsphenamine contains, and clinical trials have amply demonstrated the latter drug to be the prompter in its action. In 1931, I reported the comparative achievements of old arsphenamine, neoarsphenamine and silver arsphenamine over a period of several years, in a series of over 400 patients with early syphilis.* The results were overwhelmingly in favor of old arsphenamine, both as to effectiveness in healing open lesions, in reducing a positive Wassermann reaction, and in the relative scarcity of toxic effects from the drug. Reports of others, notably the Cooperative Clinic Group and the Public Health Service, have since confirmed these findings in their essentials.

Why is it then, that the average practitioner today, if he uses an arsphenamine at all, uses the less potent and, in all but ineffective doses, more toxic neoarsphenamine? The answer is not far to seek. It is based, I suspect, upon the thoroughly respectable fallacy that a straight line is the shortest distance between two points. With due apologies to Euclid, I propose to show that this is not necessarily true. In the old days when the acid arsphenamine solution had to be neutralized by the physician with sodium hydroxide drop by drop, and the disasters which followed upon imperfect alkalization or, in many instances, failure to alkalize at all, were constantly before him, it was not to be wondered at that he welcomed the new drug, which was soluble in water and did not have to be neutralized. There was the additional factor that the old arsphenamine required much higher dilutions and this in turn called for a gravity apparatus, while the neoarsphenamine could be given in lower dilutions and injected by syringe. The patient got less for his money, but the doctor's arm ached less and his nerves improved noticeably.

It was only after analyzing results from my own cases and those treated in the Vanderbilt Clinic that I became convinced that the shortest route to the patient's vein was not neces-

*Cannon, A. B. and Karelitz, M. B.: The comparative value of the arsphenamines in the treatment of early syphilis, *J. A. M. A.*, 97:1523, 1931.

sarily the quickest way to a cure. Now for some years past we had been using old arsphenamine by syringe successfully in our Children's Clinic, in the treatment of congenital syphilis. Its success was due in large part to the administration of the drug by a specially trained nurse, who became adept in the treatment of young children. I was anxious to find some improved method by which this drug might be safely administered by anyone who had learned to give an intravenous injection of any solution.

Consultation with representatives from one of our leading drug manufacturers led eventually to the marketing of old arsphenamine in ampules of different sizes, each accompanied by an ampule of sodium hydroxide solution to the exact strength required to neutralize the corresponding dose of the arsphenamine*. For adults, the neutralized solution may either be diluted to 25 or 30 c.c. per decigram of the drug and given by gravity, several doses being prepared simultaneously, if needed, or it may be diluted to only 10 c.c. per decigram and injected slowly by syringe, where patients are few and scattered. Children tolerate even lower dilutions by syringe (down to 5 c.c. per decigram); by gravity, the same dilutions are used for children as for adults.

We have been using old arsphenamine to the exclusion of neoarsphenamine in the Department of Dermatology of the Vanderbilt Clinic for the past six years. It has been administered by syringe to adults for two years of this period, and to children during the entire time by this method. Members of my staff have not noticed any more reactions under this method than under the gravity method, and the practically fool-proof make-up of the arsphenamine and sodium hydroxide ampules renders it all but impossible to give an imperfectly alkalinized solution, thus removing what has undoubtedly been the greatest single hazard attached to the administration of old arsphenamine.

So far I have advocated only old arsphenamine as the drug to use in making the initial attack on a freshly acquired syphilis. Occasionally, silver arsphenamine may be used to advantage. Out of any large group, there will

always be a few patients who cannot tolerate old arsphenamine in ordinary doses. In such cases we usually try first reducing the dose, and giving a solution of adrenalin chloride (5 minims) 15 minutes before the arsphenamine injection. If the patient is able to tolerate the slightly smaller doses, even if he must take them at shorter intervals, we consider it best for him to continue with old arsphenamine. If however he continues to manifest difficulty in taking old arsphenamine, we fall back on silver arsphenamine, which, with an arsenic content about equal to that of neoarsphenamine, appears to be slightly less toxic and considerably more efficacious than neoarsphenamine, according to our experience. We also try silver arsphenamine in the occasional cases which prove serologically resistant to old arsphenamine after several courses of the latter have been completed without any lapses from treatment. We do not give neoarsphenamine, even as a last resort, but prefer to continue treatment on alternate courses of bismuth and mercury in the rare instances in which a patient has proved refractory to both old arsphenamine and silver arsphenamine.

Thus far, I have devoted the major part of my discussion of anti-syphilitic therapy to the arsphenamines. A few words should be said concerning the choice of mercury and bismuth preparations, for the market is flooded with compounds of both metals, each new one claiming advantages more extravagant than the last. My advice to the general practitioner would be to stick to the relatively few products which have already received a fair trial in the larger clinics, and watch for reports such as appear in the *Journal of the American Medical Association* from time to time on newer products. Last year after analyzing our results at the Vanderbilt Clinic with various preparations of mercury and bismuth used over a number of years,* we came to the conclusion that mercury salicylate, in doses of one-half to one grain gave the most generally satisfactory results of mercury preparations tried; while of the bis-

*Ampules supplied by the Dermatological Research Laboratories of Philadelphia.

*Cannon, A. B., and Robertson, J.: The choice of bismuth or mercury with arsphenamine in the treatment of early syphilis. *J. A. M. A.*, 106:2133, 1936.

muth preparations, the oil-soluble bismocymol (N. N. R.) and the oil-suspended sodium potassium bismuth tartrate, each containing 50 mg. of metallic bismuth per c.c., gave the best all-round account of themselves. Details of dosage may be found in the article cited.

(B). *Plan of Treatment*: As soon as the physician has made sure of his diagnosis and selected his drug, he should begin treatment immediately. By no means should he ever wait for the appearance of a secondary rash before beginning treatment, if the clinical diagnosis of chancre has been confirmed either by a positive darkfield or a positive Wassermann reaction.

Treatment, however, even with the best drug and the most perfect technic, will be of little or no avail unless pursued systematically, according to a well-ordered plan. Perhaps the most difficult of all problems, and the one in which exist today the greatest differences of opinion among specialists, is the problem of how long to treat, and how often; whether to give arsphenamine alone, alternating with one of the heavy metals, or arsphenamine and a heavy metal concurrently, with rest periods between courses; whether to treat for six months, one year, or five years, and when, if ever, the syphilitic patient is to be pronounced "cured".

The standard treatment plan to which we attempt to hold every clinic patient admitted with early syphilis, calls for a total of three courses of ten injections each, of old arsphenamine, and three courses of fifteen injections each of a mercury or bismuth preparation throughout the first year. During the first month the arsphenamine and mercury or bismuth courses run concurrently; thereafter, they alternate or overlap, so that the patient is continuously under treatment with one or the other, or both. The first six injections of arsphenamine may be given twice weekly and the following four at weekly intervals, or they may be given as often as every other day for six injections and the following four at three, four, five and six day intervals to complete the first course. The second and subsequent courses of arsphenamine are given twice weekly for the first six injections and weekly for the following four. The

interval between the first and second courses of arsphenamine should be four weeks, between subsequent courses six weeks.

The first course of fifteen injections of mercury or bismuth is given at four or five day intervals for the first six injections and weekly for the following injections of the course. Both intravenous and intramuscular injections may be given at the same visit, for the convenience of the patient, except that during the first two weeks the patient receives from four to six injections of arsphenamine and only three of mercury or bismuth. Between arsphenamine courses, and while the patient is receiving only mercury or bismuth, he is also given potassium iodide by mouth.

If at the end of the first year the blood Wassermann and spinal fluid reactions are negative and there has been neither serologic nor clinical relapse, the patient is permitted to stop treatment and remain under observation, returning at intervals of three months for blood tests during the second year, and at longer intervals thereafter.

"Cure." The Wassermann Reaction as a Check on the Results of Treatment.—The criteria of a patient's progress under antisyphilitic treatment are to be found chiefly in the clearing up of the external manifestations, the reduction of a positive blood Wassermann to negative, and the improvement in the patient's general well-being. From a public health standpoint, the first is undoubtedly the most important. A chancre, if uncomplicated by some superimposed infection, will ordinarily heal with a very few injections of old arsphenamine, in a young and otherwise healthy subject. Mucous patches and condylomata also disappear with astonishing rapidity, while the average early generalized eruption will clear sometimes within a few days after a single injection of arsphenamine, and usually after two injections. The late secondary eruption is generally more resistant.

The disappearance of the outward signs of syphilis, however desirable in itself, is no indication that the patient is cured, as many found to their sorrow in the early days of the arsphenamine era. The Wassermann reaction is the physician's most dependable guide to prog-

ress. We recommend that a Wassermann be taken once a week, before the injection, but at the very least at the beginning and end of every course of treatment. This again does not mean that a single negative Wassermann indicates the dissolution of the last remaining spirochete in the patient's system. On the other hand, a persistently positive Wassermann, or one which fluctuates between positive and negative serves as a pretty definite indication for continued treatment. As has already been explained, in connection with the treatment plan, we advocate a minimum of eleven months' treatment according to plan, regardless of negative or positive serology in the meantime. If, however, the Wassermann reaction has become negative by the end of the first course of arsphenamine, as is usually the case, and if it then remains consistently negative, when taken at not less than monthly (preferably weekly) intervals, up to the end of the first eleven or twelve months, there is strong evidence that the patient has his infection under permanent control, and that he is safe in discontinuing treatment at this point. This evidence should be corroborated by a thorough physical examination, roentgen rays of the heart and electrocardiogram. It should be further supported by a least one test of the spinal fluid; one at the end of the first arsphenamine course and another at the end of the first year or eleven months is better still.

If, on the other hand, the serum reaction has not responded favorably to regular and continuous treatment as outlined, if there has been any recurrence of specific symptoms, or if the patient has been irregular in attendance or unable to tolerate average doses of the preferred drugs, then the treatment plan must be modified to suit the individual case. In so far as my own experience has shown, the physician will be able to achieve what is by practical standards a "cure" in close to 100 per cent of patients who can be made to follow the procedure outlined from the early weeks of their infection.

The Problem of Contacts and the Follow-up of Irregular Patients.—Perhaps this topic does not strictly fall within the purview of my subject, but I shall include brief mention of it, for the very obvious reason that not even an ideal

treatment scheme, propelled by the most active drugs, navigated by the most far-sighted doctor, and armored by all the safeguards of modern technic, will bring the patient to safety if he fails to embark upon it, if he embarks only to disembark in the middle of the course, or if he escapes himself and leaves behind him others infected with his germs. I believe that neither regimentation nor laissez-faire will solve these problems. It is fairly obvious that in syphilis more than in any other communicable disease, the business of keeping the patient under treatment and of reaching his contacts is a highly individual one. The physician by tact and considerate behavior will probably be able to achieve results alone in the majority of instances. Where patients fail to give reasonable cooperation, more drastic measures will have to be followed. In our clinic practice, physicians keep in close touch with an active and efficient Social Service department, which has been highly successful in keeping patients under treatment and in inducing contacts and members of the patient's family to come in for examination and treatment. Public Health officers in many localities have developed very effective measures for bringing in the more recalcitrant patients who can not be reached by other methods.

If I have confined my remarks to the subject of early syphilis, it is not from any desire to minimize the importance of diagnosis and treatment of the disease in its later stages. It is rather that the early period, since it constitutes the acutely infectious stage, is of the most immediate importance from the standpoint of public welfare, and furthermore, because it offers the most tangible rewards in its response to well-ordered treatment. It is in the early period that a standard treatment scheme can be employed to the best advantage. In the tertiary stage and after the nervous and cardiovascular systems have become involved, treatment must be much more highly individualized according to the structures damaged and the extent of their damage. Treatment is for the most part palliative, and is directed not toward sterilization of the organism but toward arresting the active progress of the infection and bringing about a truce between parasite and host.

SUMMARY

I might recapitulate my concepts of modern trends in the diagnosis and treatment of early syphilis somewhat after this fashion:

1. The public must be made syphilis-conscious, as it has been made tuberculosis-conscious and cancer-conscious.

2. Both public and private agencies must cooperate to provide medical care for all persons infected with syphilis, and the patient should have as much free choice in selecting medical care as is consistent with the public safety.

3. The general practitioner can and should be competent to diagnose early syphilis, but he should have the aid of laboratory facilities supported by Federal, state and local governments.

4. The general practitioner can and should give treatment according to a logical plan and with the best drugs available in the light of current knowledge.

5. The best single drug is old arsphenamine, and it can be administered by a safe and practical method available to the general practitioner, as described.

6. A "cure" for practical purposes, is possible of attainment if the standard treatment plan is adopted in the early stages of infection and adhered to for at least one year. A "cure" should be verified by the procedures described.

7. The problem of keeping patients under treatment and of reaching contacts requires the cooperation of both public and private agencies, including visiting nurses and social service groups.

RADIATION THERAPY IN BENIGN UTERINE HEMORRHAGE*

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One of the greatest triumphs in radiation therapy is the spectacular result secured in benign uterine hemorrhage. This method of treatment has been refined and definitely proved during the past twenty years. Today it is recognized as the method of choice in the treatment of menorrhagia and metrorrhagia,

when other therapeutic measures have failed, which present no gross lesions and in certain small fibromyomas of the uterus. In each of these the endometrium shows the typical hyperplasia picture.

It has been my observation that only a few surgeons are acquainted with the true value of radiation therapy in the management of benign uterine bleeding. In gynecologic circles it is generally conceded that hysterectomy has no place in the treatment of functional bleeding, except in rare instances. Radiation therapy in these cases is based on the rational procedure of stopping the bleeding hormone—probably excess of estrin. Curettage, at best, affords only a temporary relief because the cause has not been removed. Just as soon as the endometrium has regenerated there will be bleeding again. The administration of antuitrin S and other hormonal products usually results in failure.

CLASSIFICATION OF BENIGN UTERINE BLEEDING

Benign uterine bleeding is best divided into three groups according to the age of the patient: (1) Bleeding of adolescence and of young women; (2) bleeding of middle life and of the menopause; and (3) bleeding occurring after the menopause. The first and second groups, comprising bleeding before or during the menopause, make up by far the greatest number of patients and in this group roentgen ray treatment is the method of choice. In women who have passed the menopause radium may well be the treatment of choice.

Roentgen rays act directly on the ovaries, affecting the endometrium but little, while radium acts directly on the endometrium, causing a complete and permanent destruction of the same but having very little effect on the ovary. A correct diagnosis is the essence of successful therapy and in uterine bleeding it is imperative that a correct diagnosis be obtained. Occasionally it is permissible, after a careful history and other studies of the case, to administer treatment without a diagnostic curettage. When one recalls that two per cent of excessive uterine bleeding before the menopause is due to malignancy and that twelve per cent during or upon approaching the menopause and that sixty per cent of bleeding women who

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

have passed the menopause have a corpus cancer, there should be no treatment instituted before carcinoma of corpus uteri has been ruled out.

ROENTGEN RAY DOSAGE

In the younger group of women, who are not approaching the menopause, a subcastration dose of high voltage roentgen rays to the pelvis, in correct dosage, will in a high percentage of cases produce a temporary cessation of menstruation for a period of approximately twelve months. When menstruation is again resumed there will be normal function. It is not necessary and, in fact, in the younger group it is very difficult to produce a permanent amenorrhea. A dosage of 275 r delivered at the ovary is usually regarded as a permanent castration dose. The younger the patient the higher the dosage necessary. In the treatment of women at or near the menopause it is customary to administer a dosage of 400 r/o, 20 cm. fields, to anterior and posterior pelvis on alternate days, each area one time. Patients who have bled down and have a low red cell count should first receive a blood transfusion and then be treated cautiously, administering doses over four or five days. There are no skin changes noticeable from such treatment, the dosage being less than an erythema. Patients who are in the first half of the menstrual cycle usually will not menstruate again following proper dosage. Patients who are in the second half of the cycle will menstruate once and a small percentage, twice. Occasionally following the treatment there will be an increase in the amount of the flow, but not to an alarming amount nor does it last more than a day or so.

Bleeding in the third group of women, that is, those who have passed the menopause, demands a careful curettage for study and this group is best treated by the use of radium, which is applied at the time of the curettage and 1,800 to 2,000 mg. hrs. applied. In the event that the tissue recovered reveals malignancy the radium should be left in to deliver 6,000 mg. hrs. or more.

Fibromyomas of the uterus not larger than three months' pregnancy, of the interstitial and intramural type, may be treated with radium or roentgen rays with curative results. When the

tumors are larger, roentgen rays may be used as palliation, or to arrest hemorrhage and permit the patient to regain sufficient health for the performance of a hysterectomy. Pedunculated and subserous fibromyomas should not be irradiated because of the danger of necrosis and sloughing.

There is much misunderstanding regarding the effect of radiation therapy on the sexual life of the patient. Careful study of many cases and reports from the literature confirm the fact that as a general rule there is no loss of libido, and that in many cases there is much improvement in the sexual life of the woman. Menopausal symptoms, as a rule, do not occur in a normal, well stabilized woman; where there is already nervous instability the menopausal symptoms may appear quite prominent, but are satisfactorily controlled with weekly doses of theelin in oil, 2,000 units, for the first month and then every two weeks thereafter until free of symptoms.

An examination of my records shows that I have treated 210 cases of benign uterine hemorrhage with satisfactory results and the cessation of bleeding in 100 per cent of the cases. In this series of cases there was no mortality nor morbidity.

SUMMARY

Radiation therapy is the acknowledged method of choice in the treatment of functional uterine bleeding and certain types of fibromyomas of the uterus. Hysterectomy today has no place in the treatment of functional bleeding, except in rare instances. Hormonal therapy is generally disappointing. A plea is made for the conservation of woman's most precious organ.

DISCUSSION

Dr. A. G. McHenry (Monroe): Irradiation is certainly of great value in the treatment of functional uterine hemorrhage. It is most valuable possibly in the age group from thirty-six years on. Hormones are very disappointing and roentgen ray given, as Dr. Edwards suggested, on alternate days, does not give the patient a very long stay and is certainly of advantage. Frequently we are unable to control bleeding in any other way.

If the patient is above forty years of age, she certainly should have curettage to rule out the possibility of malignancy. The patients I have

treated in this manner have showed great improvement from irradiation.

Dr. Paul W. Winder (Shreveport): In discussing the treatment of functional uterine bleeding we must take into consideration the type of functional disturbance and the age of the patient. I agree with Dr. Edwards that radical surgery has little place in the treatment of this functional disturbance, but I cannot agree that radiation therapy is the treatment of choice in all groups. I rather think we have two choices of treatment; namely, a conservative plan consisting of curettage and glandular therapy, and a radical plan consisting of radiation therapy. The choice of the type of treatment depends upon the type of functional disturbance and the age of the patient.

It is known that in the group consisting of functional uterine bleeding there are three types of endometrial pictures: First, and most common, is the hyperplastic type of endometrium, which makes up approximately 80 per cent of this group. Without going into the endocrinology of this disturbance it seems now to be clearly established that we are here dealing with a failure of ovulation and a steadily increasing amount of estrin or theelin, which increases the hyperplasia. The second possible endometrial picture is that of an abnormal secretory type, termed intermittent shedding of the endometrium by Traut and Kuder of Cornell University. The mechanism of this disturbance is only theoretical but was thought by Traut and Kuder to be a prolonged and weak corpus luteum effect. The third possible endometrial picture is a condition described as a disease entity by Traut and Kuder and termed irregular ripening of the endometrium and histologically represents a mixture of hyperplastic phase and corpus luteum phase. This condition, to me, is merely ovulatory bleeding.

The functional bleeding due to intermittent shedding and irregular ripening of the endometrium, according to the experience of Traut and Kuder, is curable by curettage alone, hence more radical treatment is unnecessary. The larger group due to hyperplasia of the endometrium is much more complex to treat. Age here is an important factor in governing treatment. In the medium age group, say 35 to 40, and in the menopausal age group, say 40 to 50, I will again agree that radiation therapy is the treatment of choice. However, in the young age group, say from 13 to 35 years of age, I feel that glandular therapy should be given a thorough and well supervised try, and in a good per cent of these cases the results will be gratifying. In those cases that do not respond to the glandular therapy, radiation therapy will, though a more radical procedure at this age, be the treatment of choice.

Dr. Jean Paul Pratt (Detroit, Mich.): I am a little embarrassed to discuss this paper because on general principles I am not very much in sympathy with the free use of radiation for benign and functional lesions. The last speaker has really struck the keynote in being very careful about the diagnosis.

Briefly, I may say it is seldom found in younger women that it is necessary to use either radiation or operation without curettage for diagnosis. There are many things that may be done, beginning with general physical examination. A great many of these disturbances of bleeding are due to habits of life, habits of eating, over-weight, under-weight, lack of exercise or frequently too much exercise. In the younger group, difficulty in their school life is very often the cause of bleeding. The practical way is to spend most of the time making the diagnosis and then very little need will remain for either operation or radiation. In very selected cases it may be used, but it should be carefully controlled.

The use of calcium may be mentioned. Just why calcium is lacking, or why it is insufficient, is difficult to say. I have been repeatedly surprised to find that small amounts of calcium in women who are bleeding, whether from fibroids or hyperplasia, correct the condition. I often wonder, whether they stop because of calcium, or whether they were ready to stop anyhow.

That leads me to speak of another assistance to diagnosis, namely, keeping careful records. I have made a chart for women to keep at home. It is marked off in months and days. Patients are requested to make graphic representation on this chart indicating the character of menstruation, how frequent, the amount of flow. When completed, the chart is often very enlightening; it is so different from the casual statements made about the flow. The amount of flow which is mentioned casually is apt to be as misleading as the amount of leukorrhea mentioned in one of the papers at the meeting yesterday. One woman says she has leukorrhea; we look and find nothing. Another says she has none but it is pouring out. We find the same situation with bleeding; the patient's interpretation is very inaccurate.

I think we should spend a great deal of time in diagnosis and remove from our list a number of patients who need no radical treatment of any kind.

Dr. Harold G. F. Edwards (In conclusion): I do not know that I have anything to add to the discussion except to thank Dr. McHenry for his remarks, and also to say that there is no disagreement between Dr. Winder and me as to how cases should be handled; I qualified my opening re-

marks "when other therapeutic methods have failed".

I want to thank Dr. Pratt for his discussion and also for bringing out one point which I have stressed and that is accurate diagnosis. That is the one essential in uterine bleeding. I recognize that there are functional conditions which are amenable to treatment other than radiation. My plea is based on the fact that I have seen so many small uteri removed from women in the Charity Hospital at Shreveport, who were functional bleeders. Since Dr. Winder and I have worked out this plan very few hysterectomies are now performed. We are now trying to conserve rather than take them out.

ROENTGEN RAYS AND THEIR USE IN THE TREATMENT OF SKIN DISEASES*

M. T. VAN STUDDIFORD, M. D.

NEW ORLEANS

Daily lay people ask this question, "Of what use are roentgen rays in the treatment of skin affections?", and in the same breath they answer their own question by saying, "Of course, I know they are dangerous, causing burns, which leave scars." If all erythematous reactions of roentgen rays are to be spoken of as burns and if all the sequelae of diseases treated on or through the skin are to be a jury trial and conviction of roentgen ray treatments, then it is high time that the medical profession look into this agent of treatment, condemn it, discard it and look for some other form of therapy for these conditions so often treated by roentgen rays alone or used in conjunction with other forms of therapy. However, if the medical profession agrees that the roentgen ray is a very valuable agent of therapy, then they should help defend its use. Furthermore, once that part of the profession, unfamiliar with the use of modern equipment, technic and control of dosage, have familiarized themselves with the possible advantages of this form of therapy, then they should join in the education of the lay public to help break down the too prevalent idea of the dangers attached to its use in proper hands. They should also help kill the idea that

it is used only in malignant conditions as a last resort.

ACNE

This educational program should then start by reviewing the more common skin affections treated by roentgen rays with favorable results. Acne, a disease resulting from over activity of the sebaceous glands of the face, neck, shoulders, chest and occasionally the entire trunk, usually makes its appearance during adolescence and often times leaves a scarred, pitted, self-conscious individual with an inferiority complex of varying degree. Even with the present knowledge of endocrinology, roentgen rays still offer the best therapeutic agent.

McKee has shown conclusively, by his experiment treating one side of the face affected with acne by the accepted routine manner and protecting the opposite side from the roentgen rays during these treatments, that scarring is less frequent and less marked on the roentgen ray treated surfaces and that cures were accomplished in a larger per cent of patients and in a shorter period of time. He proves by this series of patients that roentgen rays lessen scarring rather than increasing or causing scarring in the treatment and cure of acne. I should like to digress just a bit here to see why scarring occurs in acne patients.

We are confronted with abscesses of the sebaceous glands; if these abscesses are large, the resulting scars will be large and, if these abscesses are small or shallow, the scars will be small and shallow. No one conversant with the pathology of acne would expect any form of therapy to produce new tissue where abscess formation has caused destruction of tissue with scar tissue formation. Tubercular affections of the skin respond favorably to treatment with roentgen rays, or its similar agent, radium. These are the agents of choice in tubercular affections of the neck, axilla, groin, anal and scrotal regions.

Cutaneous actinomycosis and blastomycosis react more favorably to large or cauterizing doses of irradiation than to any other therapy. It is believed by most investigators that roentgen rays cause a favorable influence upon folliculitis, carbuncles, and inflamed sinuses. Pain is lessened and circulation is accelerated after

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as little radiation as is required to make a roentgen ray picture, in many cases. Pruritus about muco-cutaneous junctions, such as pruritus ani or pruritus vulvae, is often relieved by one-half or one-quarter skin unit of roentgen ray treatment.

NEURODERMATITIS

Neurodermatitis with its resultant lichenification located on the neck, arm pits or popliteal spaces, is affected favorably by roentgen ray treatments. The itching of lichen planus and the regression of the skin lesion usually follow a few roentgen ray treatments. The pain is lessened and healing of herpes zoster is often accomplished by the application of roentgen rays over the lesions and along the affected nerves.

MISCELLANEOUS CONDITIONS

Verrucae or warts under the finger nails, on the palms and soles usually respond to irradiation and leave no apparent scarring. It is often rather disconcerting to have a patient present a long or circular scar with a recurrent verruca either on an edge or surrounding an excision scar.

Psoriasis more quickly and dramatically responds to roentgen ray treatments than any other form of therapy. The results are only for a short or longer period of time and care should be maintained not to repeat treatments too frequently or at too close intervals.

Tinea tonsurans of children can, by an epilating dose of roentgen rays, be cured of the infection when all other methods have failed. Tinea barbae or barber's itch in patients where other therapy has failed may be cured by epilation of the beard. Onychomycosis, or tinea of the nails, does not often respond to roentgen ray therapy, but the inflammation of the surrounding nail bed may be lessened. Roentgen ray therapy of tinea infections of the fingers and groin is often the agency with which to combat the pruritus but the fungi are not killed by the rays.

Roentgen ray treatment of foot and toe infections is a very dangerous procedure where very much of the surface is affected. The vesicles and itching of pompholyx or dysidrosis are benefited by roentgen ray treatments.

Large keloidal scars become pliable and flat-

tened by irradiation, as do angioma or birthmarks.

New growths such as the lymphoblastomycosis group, of Hodgkin's disease, leukemia cutis, lymphogranulomatosis cutis, and mycosis fungoides are affected by irradiation and it is usually the most useful treatment.

Epithelioma of the basal cell type, kraurosis vulvae, Paget's disease of the nipple, sarcoid, epithelioma of the multiple benign type, and epithelioma of prickle cell type, respond well to irradiation and the trend in clinics treating malignancies is to produce roentgen rays in larger amounts, of higher voltage and more selective filtration.

SUMMARY AND CONCLUSION

The object of therapeutic applications of roentgen rays or radium is to cure or relieve objective and subjective symptoms. Roentgen ray gives a high per cent of cures in patients suffering with acne, reduces scarring and shortens the period of involvement of the skin. Scars are a result of necrosis of tissue, not a result of properly applied irradiation. Cutaneous and superficial tuberculosis, actinomycosis and blastomycosis respond to irradiation, as do folliculitis, carbuncles and inflamed sinuses. Pruritus, itching surfaces and resultant neurodermatosis are often relieved. Verrucae, or warts, are cured, psoriasis relieved, tinea eradicated, keloids and scars improved and different kinds and types of malignancies often times cured or relieved. All the processes of treatment, reactions to treatments, and results are rather definitely known but here we must lend a bit of warning. Because one owns roentgen ray equipment, is he justified in treating any condition he is unable to diagnose and properly prognosticate? Is the physician who has not had experience in the roentgen ray treatment of disease justified in sending his patient to one only technically versed in applying prescribed dosages? Lately, eye specialists have seen increasing numbers of cataracts due to mercury vapor lamp treatments. Dermatologists are seeing increased numbers of roentgen ray burns and their sequelae. The only conclusion to be drawn is—either treatments by the untrained or careless should be avoided, or let all spend considerable time in court defending malpractice suits.

DISCUSSION

Dr. J. W. Tedder (New Orleans): The most valuable single therapeutic agent in the treatment of skin diseases is probably the roentgen ray machine. This fact alone accounts for its abuse. The ownership of a roentgen ray apparatus does not justify its indiscriminate application. A knowledge of skin diseases and their pathology is essential to its proper use and successful results.

Dr. Van Studdiford has enumerated a few of the skin maladies that are favorably influenced by the proper use of the roentgen rays. There are just as many, or more skin diseases that are aggravated or unfavorably influenced by their use. One must recognize the limitations of the roentgen rays as a therapeutic agent and realize the danger of over-treatment, as well as the danger of treating a condition that should not have roentgen rays. Treatment with roentgen rays should be given only after diagnosis has been made by one particularly trained to recognize the indication for and the contraindications to their use. One must have a definite knowledge as to when sufficient treatment has been given and positively refuse to give more. Definite and accurate calibrations of the apparatus used should be made frequently and minute records kept as to dosage administered.

Dr. M. T. Van Studdiford (In closing): I have nothing to add except to say that the reason this paper was presented in this form is because within the last year I have seen so many unfavorable roentgen ray reactions in my practice which were administered by those skilled in taking roentgen ray pictures but lacking experience in treating diseases with roentgen rays.

ACUTE PANCREATITIS*

W. H. COLE, M. D.†

CHICAGO, ILL.

The various types of acute pancreatitis can be divided into two groups, namely, acute pancreatic necrosis (hemorrhagic) and acute interstitial pancreatitis. The latter group is much more common; most of the remarks in this discussion will be limited to this group.

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From the pathologic standpoint there is considerable difference in the lesions encountered in the pancreas, in so far as in acute pancreatic necrosis the entire pancreas may be necrotic, markedly swollen and the seat of diffuse hemorrhage. On the contrary the pancreas of the patient with acute interstitial pancreatitis may show very little except an enlarged indurated gland accompanied by edema and mild evidence of acute inflammation. Each type of pancreati-

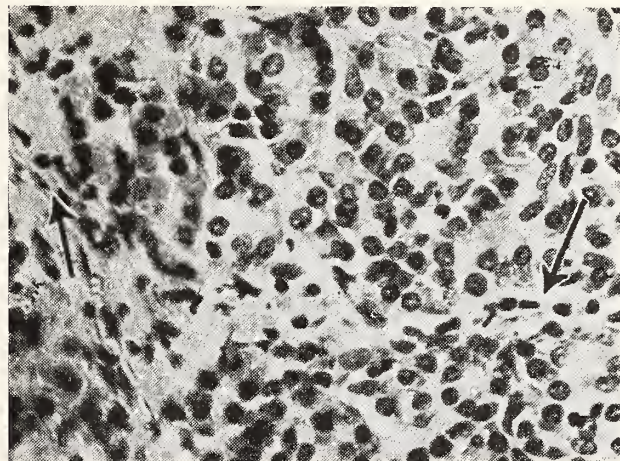


Fig. 1. Biopsy of a pancreas removed 12 to 14 days after onset of acute symptoms. Fat necrosis was still noted at operation but the photomicrograph reveals a gland which has practically regained its normal structure save for the infiltration of a few lymphocytes as indicated by the arrows.

tis varies a great deal in severity. The variation is so marked that it is frequently difficult to determine which type of lesion is present. On some occasions, as is noted on two of the patients I have described, there may be local necrosis of the pancreas with other changes consistent with acute interstitial pancreatitis in the remainder of the organ. This suggests that even though the extreme grades of the two conditions are remarkably different pathologically, the primary etiologic factor may be the same in each instance. It does appear, however, that there may be several contributory factors in the development of acute pancreatitis.

ETIOLOGY

The first important fact presented from the etiologic standpoint was that reported by Opie¹ who noted the development of acute pancreati-

tis in a patient with a stone lodged at the sphincter of Oddi with the establishment of a common channel between the common bile duct and the pancreatic duct. This report has led to the supposition of many men that reflux of bile in the pancreatic duct is an important factor in the production of acute pancreatitis. There is no agreement, however, regarding this point. Several years ago Cameron and Noble² made the important observation on fresh cadavers that if a small gall stone were inserted in the common duct and lodged in the ampulla of Vater, fluid could be forced from the common duct into the pancreatic duct with a pressure no greater than 100 mm. water. They noted that this reflux occurred in 66 of 100 fresh human cadavers. Wangenstein³ and associates likewise made an important contribution when they noted that in cats acute pancreatic necrosis was produced in 15 of 31 instances when the sphincter of Oddi was occluded by a suture, and the animal given a fat meal. This implies that contractility of the gallbladder or sudden change of pressure might be capable of producing a reflux of bile into the pancreatic duct. On the other hand, Rich⁴ has expressed the opinion that reflux of bile is not an important factor in the production of acute pancreatitis, and favors the theory that obstruction in the pancreatic ducts is produced by metaplasia of epithelial cells acting as mechanical obstruction with the infiltration of pancreatic secretion in the parenchyma of the gland, and activation of trypsin. At any rate, in most instances the damage is primarily of chemical origin and ordinarily not associated with infection except in the later stages of the disease.

CLINICAL MANIFESTATIONS

As previously mentioned there is considerable variation in the severity of the two types of disease. Obviously the manifestations of acute pancreatic necrosis will be much more fulminating than those of acute interstitial pancreatitis. The symptoms of acute pancreatic necrosis are usually ushered in rapidly (frequently following a full meal) and consist of severe pain in the epigastrium, nausea and vomiting. Examination reveals an acutely ill pa-

tient complaining bitterly of pain and revealing evidences of toxicity. Pronounced evidence of shock, including tachycardia, thready pulse, low blood pressure, cold, clammy sweat and even cyanosis may be present. By no means, however, are these manifestations of shock always present in acute pancreatic necrosis. The temperature is usually normal or even subnormal

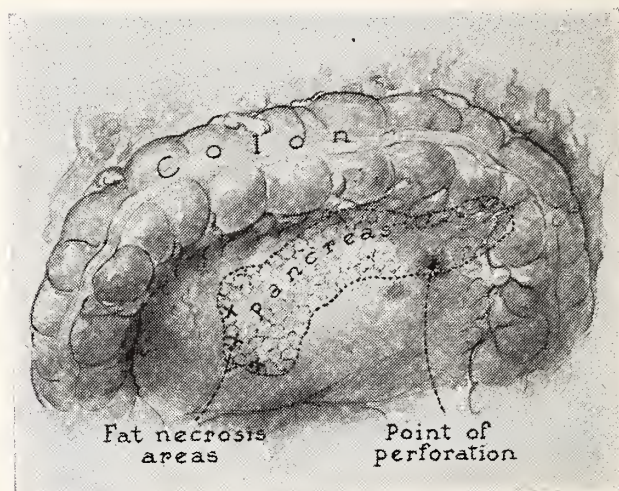


Fig. 2. Diagrammatic sketch made of operative findings in a patient 14 days after the acute onset of symptoms of pancreatitis, and three or four days after all manifestations had subsided. Local necrosis of the pancreas had penetrated through the mesocolon. Numerous areas of fat necrosis were noted, particularly on the peritoneum near the head of the pancreas. The patient had stones in the gallbladder and common duct. Cholecystectomy and choledochostomy were performed. Convalescence was slow but uneventful.

in the first few hours after onset. Usually the manifestations of acute pancreatic necrosis resemble those of a severe grade of acute interstitial pancreatitis, as described below.

One of the most pronounced symptoms of acute interstitial pancreatitis is pain in the upper abdomen. On account of the frequent accompaniment of gallbladder disease the location of the pain complained of may be variable, and in fact extend over the entire upper abdomen. It is a significant feature, however, that the pain in acute pancreatitis is located in the epigastrium and extends to the left upper abdomen in an area corresponding somewhat to the location of the pancreas. Nausea and vomiting are usually present during the first two or three days. On most occasions there is no fever. None of the manifestations of shock are present except that frequently a tachycardia

will be noted. Examination will reveal tenderness over the upper left abdomen which is acute at first but gradually subsides until after several days very few symptoms are complained of. Slight hyperbilirubinemia may be present but rarely is deep jaundice encountered. The leukocyte count is variable, but may be as high as 30,000 or 40,000.

DIAGNOSIS

The diagnosis of either type of pancreatitis is frequently very difficult. Perhaps the most difficulty in differential diagnosis will be encountered in acute pancreatic necrosis, particularly because the pain and tenderness will be so diffuse over the upper abdomen, and the manifestations so acute as to lead one to suspect a perforation of a viscus, if the symptoms are so acute as to produce shock. This feature alone should be sufficient to eliminate the diagnosis of perforation of a peptic ulcer, since perforation of an ulcer produces collapse but not shock. The pulse rate in a patient with a perforated ulcer is frequently normal, and is seldom higher than 80 or 90 per minute during the first few hours after perforation. Pain is severe in either condition, but is perhaps more severe in perforated ulcer. In the group of patients with pancreatic necrosis who show collapse in the absence of shock, extreme difficulty may be encountered in differentiating the two lesions. A roentgenogram of the patient in a sitting position to determine the possible presence of gas under the diaphragm should obviously be taken if a perforated ulcer is suspected. If gas is found the diagnosis will be obvious. If gas is not found the diagnosis of a perforation of an ulcer cannot be excluded because gas under the diaphragm is probably found in only slightly more than half of the patients with perforation of an ulcer.

The diagnosis of acute interstitial pancreatitis will usually not be difficult providing the diagnosis is considered while the patient is being observed. The history of pain in the epigastrium extending to the left upper quadrant and radiating posteriorly to the spine or to the left of the spine, should lead one to suspect the diagnosis of acute pancreatitis. Since gallbladder disease is so commonly encountered along with

acute pancreatitis the symptoms of one disease may overshadow the other. The pain in the left upper quadrant produced by the pancreatitis may be so much less pronounced than the pain in the right upper quadrant produced by the gallbladder disease that the patient will not complain of it voluntarily. Specific questions must therefore be asked as to the absolute location of the pain. Confirmation as to this feature may be obtained by examination, particularly for tenderness in the left upper quadrant and epigastrium over the location of the pancreas. The presence of a fever is so variable, as it is in such diseases as gallbladder colic, that the patient's temperature will not be of any value in establishing a diagnosis.

The blood amylase, as popularized by Elman⁵ and associates, may be extremely helpful in establishing a diagnosis. It has been proved on innumerable occasions that an experimental obstruction of the pancreatic duct routinely results in a rise in the blood amylase. Certain precautions must be taken in interpretation of results of the blood amylase test. It has been my experience and the experience of other workers using the test, that the rise in blood amylase is present only during the acute stage of the disease and persists only for a few days. Figure 3 illustrates a typical blood amylase curve in acute interstitial pancreatitis. The

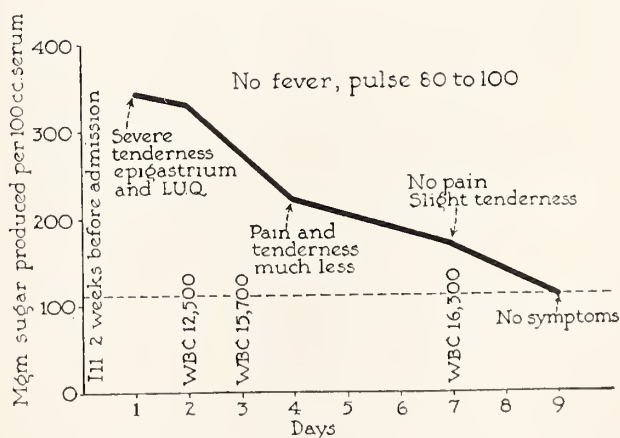


Fig. 3. Blood amylase curve of a patient with acute interstitial pancreatitis. The symptoms were of only 24 hours' duration when the first reading (340), as shown on the chart, was taken. By the end of the fourth day the level had dropped almost to normal. This represents the same patient as Fig. 2.

Somogyi modification* of the Wohlgemuth test is the only one that I have used. The results are expressed in milligrams of sugar produced by the digestive action of 100 c.c. of blood. The normal readings will be found to range from 90 to 170. Elevations as high as 1000 and more may be encountered. Occasionally extremely low readings are encountered in patients suspected of having acute pancreatitis. This has occurred in my experience on two or three occasions, but usually in patients who have had symptoms of pancreatitis for two or more weeks. It was obvious in one patient, who showed a marked rise in the blood amylase which dropped after a few days to a level below normal. As yet insufficient data has accumulated to allow us to interpret these low readings. Occasionally an elevated blood amylase will be found in patients with pancreatic cyst and carcinoma of the pancreas. Rarely indeed will the level be above normal in patients with the so-called chronic pancreatitis.

TREATMENT

There is considerable difference of opinion as to the treatment of acute pancreatic necrosis. Surgeons, including Jones and others, are firmly convinced that these patients should be operated on as an emergency, the capsule of the gland

split and the areas drained. However, insufficient data has accumulated in the comparison of operated and unoperated cases to draw a definite conclusion as to the choice of radical or conservative therapy. In an experience with several cases Wangenstein⁶ feels convinced that emergency operation offers very little for patients with acute pancreatic necrosis and prefers to delay operation until after acute symptoms have subsided. When an actual abscess exists about the pancreas operation is, of course, definitely indicated. However, by far the greater majority of cases of acute pancreatitis are undoubtedly of chemical origin and not of bacterial origin; if an abscess exists it usually does not develop early in the disease.

There is rarely any doubt that the procedure of choice in acute interstitial pancreatitis should be conservative. The patient should be treated medically with proper fluid and glucose administration until the symptoms subside. In almost every instance observed by the author, the acute symptoms subside after several days and the patient regains a reasonably good physical condition. Most patients will retain mild tenderness over the region of the gallbladder and pancreas for several days or weeks; however, such patients are practically always good operative risks after the acute symptoms subside. Operation can therefore be performed and the correct operative procedure on the gallbladder be carried out. Usually cholecystectomy will be indicated. Stones are frequently found in the common duct which should be carefully inspected and opened if the duct is dilated or its walls thickened. Some observers issue a warning as to the removal of diseased gallbladders in the presence of pancreatitis, on the basis that the gallbladder may be needed later to perform an anastomosis with the pylorus or duodenum to shunt around an enlarged pancreas. I am inclined to agree with Jones⁷, who feels that such anastomosis is rarely indicated. Jones remarks, in fact, that in his experience with 2500 cases of cholelithiasis, he has never encountered an instance when he needed to perform a "cholecystgastrostomy for chronic interstitial pancreatitis". The treatment is therefore directed toward alleviation of the gallbladder disease.

* Colloidal suspension of 1½ per cent washed (C. P.) corn starch is prepared as a starch solution which if sterile keeps fairly well; the formation of molds makes it unsuitable. To 5 c.c. of this suspension, 1 c.c. of the patient's plasma or serum and 2 c.c. of 1 per cent sodium chloride are added, and the mixture incubated for thirty minutes at 40° C. Then 1 c.c. of 5 per cent CuSO₄ is added immediately, the mixture is shaken and 1 c.c. of 7 per cent sodium tungstate is added; the mixture is again shaken and filtered. Sugar determination is made on 5 c.c. of the filtrate. From the total amount of sugar formed by the hydrolysis of the starch, is subtracted the amount of sugar present in 1 c.c. of the patient's serum. The result is expressed in milligrams of sugar per 100 c.c. of blood. Normally 70 to 200 milligrams of sugar will be produced by 100 c.c. of blood serum in this way. At the height of an acute pancreatic obstruction or inflammation this value may reach a figure as high as 3000 milligrams, i.e., milligrams per 100 c.c. of blood. (From Cole and Elman's Text Book of General Surgery, D. Appleton-Century Co., 1936.)

SUMMARY

Although tryptic digestion is undoubtedly one of the most important factors in the pathogenesis of acute pancreatitis there are undoubtedly many factors which may play a part in the etiology of the disease. Gallbladder disease is encountered in at least 70 per cent of patients with acute pancreatitis. In fact all of the patients with acute interstitial pancreatitis that I observed had gall stones; roughly two thirds of them had stones in the common duct.

In my experience, the pain of acute pancreatitis simulates that of so many other acute diseases in the upper abdomen that a correct diagnosis of acute pancreatitis will rarely be made unless the physician is seriously considering that disease in differential diagnosis. The manifestation which is most reliable in making the diagnosis is pain and tenderness in the left upper quadrant over the location of the pancreas, and which radiates to the vertebral column or to the left of it. The most reliable single factor of value in diagnosis of acute pancreatitis is the blood amylase test. Rarely will it fail to show an increase far above normal, providing the test is performed within the first few days of the disease. The blood amylase curve falls rapidly to normal.

The treatment of acute interstitial pancreatitis should undoubtedly be conservative in the acute stage; after the acute attack subsides, operative treatment should be directed to the gallbladder if it is found diseased. There is disagreement as to the choice of treatment in acute pancreatic necrosis although most surgeons probably favor emergency operation. I am not convinced that more lives will be saved by this procedure of emergency operation unless an actual abscess exists.

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DISCUSSION

Dr. Walter Moss (Lake Charles): At the Charity Hospital in New Orleans, the treatment of pancreatic necrosis has been considered an emergency. In the treatment of this condition I have always felt that, as soon as the patient was in sufficiently good condition, the abdomen should be opened, the capsule of the gland broken up and drains inserted through the capsule of the gland, through the gastrocolic ligament to the omentum. In a great many cases, this has been abandoned. There are primary factors, which in many instances have nothing to do with the condition at hand, but these primary factors have to be treated. We have a patient in a serious condition—this is, of course, with the necrotic type—and often there is not enough time to permit us to do away with the gallbladder. However, sufficient exploration should be made, and in a number of cases the gallbladder has to be opened and drained. In these cases sometimes it is possible to enlarge the cystic duct opening into the common duct and remove whatever stones are present, draining the common duct and inserting a T tube, allowing egress through the abdomen. And if there is not time to remove the gallbladder, the tube can be left as a tract for drainage.

With the help of blood amylase determinations it is possible to make a diagnosis, not that I presume any experience of my own with blood amylase tests, but with blood amylase it would seem as though we should be able to determine the degree and progress of necrosis with frequent estimations. In the interstitial type, the pancreas has to be removed and there is no time to wait in this particular case.

If more frequent routine use were made of the blood amylase test when attempting to diagnose patients presenting severe epigastric pain, it is probable that the clinical entity known as acute pancreatitis would not be so rare as it is now considered to be. Even if one has not the facilities for repeated blood amylase determinations, he may definitely learn from one estimation whether or not to include acute pancreatitis as a possibility.

Those of us who practice at a distance from, or have no connection with large clinics or hospitals, see very few cases of acute pancreatitis, but we do see many patients suffering with acute epigastric distress. Some patients in this latter group are diagnosed coronary thrombosis or biliary colic, but

many are discharged with no definite diagnosis. It is apparent that the result of more general use of the blood amylase test will be more accurate diagnoses for these patients.

There is one other point in reviewing this subject. When I first became acquainted with the use of this test by Elman and others, I was impressed with the fact that the determination of blood amylase is something that a great many of us have no knowledge of, and, without a large laboratory, it appeared to me that it would probably take a great deal of detailed technical work actually to determine the quantity of blood amylase in a particular patient. But the test as outlined by Elman, and that used by Cole and others of authority on the subject is relatively simple and can be determined by any of us. Certainly, it is a very helpful diagnostic aid to the clinical pathologist.

Dr. Sidney M. Copland (New Orleans): About two years ago, in the Department of Surgery at Louisiana State University we made an extensive review of the subject at Charity Hospital. We met the disease 11 times in a four year period. This is a relatively small percentage, but it agrees with that of Cope who says it occurs less than 1 per cent. Balcombe Quick at Melbourne, Australia, states the disease occurs almost as frequently as perforating peptic ulcer.

The disease was diagnosed seven times in the 11 instances. This percentage is not bad as compared with that of De Takats and Mackenzie in which the diagnosis was missed 22 times in 22 cases. In our 11 cases, nine were white and two colored. This is unusual for we would expect no great disagreement as the admittance to Charity Hospital is about 50-50 with a slight preponderance towards the colored race. The colored female was the victim in both instances. We did not have a single case of pancreatitis in the colored male in the four year period. That can be explained by the fact that surgical gallbladder is rather uncommon in the colored male.

It may be interesting to note that Rousing and Holtz of Denmark favored the conservative non-surgical therapy in 50 consecutive cases and they report not a single death. In the four cases that were misdiagnosed at Charity Hospital, they were let alone and they died. One was diagnosed coronary thrombosis. There is a possibility that there is a future in conservative treatment because surgery in acute pancreatitis leaves much to be desired, but this is not the consensus of opinion nor is it our opinion.

I would like to know Dr. Cole's opinion of the urinary diastase test. We do know that the normal of 10-20 units is greatly increased in acute pancreatitis. Mushin, of Melbourne, reported 26 cases diagnosed on this basis and subsequently proved at operation; one case showed as high as 4100 units and the lowest in the series showed 50 units.

Dr. Daniel N. Silverman (New Orleans): Acute pancreatitis is of great interest to the internist from the standpoint of etiology as well as prevention; from the etiology because there may be gallbladder disease production of acute pancreatitis without the production of stones. It goes to the maximum of production from gallbladder disease to the development of pancreatitis. As pointed out by Boyd and Wheeler and others, emulsified food is offered as a stimulant of the gallbladder. For this reason, following their work, Denis and I, in the study of pancreatic enzymes in humans found that the food which stimulated the pancreas to its maximum extent was fat and protein, and least of all the carbohydrates. However, without the stimulation of carbohydrates, I found that the starch enzyme present sufficient to digest food. In this way, the gallbladder and biliary tract, are rested or relieved of embarrassment, the patient encouraged, and health goes on just the same.

With reference to the biochemical problem in the diagnosis of acute pancreatitis, first of all I believe we all recognize the fact that operation does not ensue with the first attack of pancreatitis. No doubt many attacks of pancreatic pain are not necessarily acute gallbladder attacks, but common attacks of acute pancreatitis. Comfort showed that some of his patients had been operated on subsequent to the first attack, but that during these attacks, some of which were mild, they would show definite increase in the blood icterus above the normal, just as Dr. Cole pointed out marked increase in the blood amylase during the attack. However, I wish to bring you back of the complications of biliary disease to show that if the patient's duodenal contents are determined no doubt we shall anticipate some of the complications, recognizing the fact clinically as pointed out by Judd, that 30 to 40 per cent of biliary infections are associated with chronic infection of the pancreas.

Dr. Warren H. Cole (In conclusion): I have nothing to add except to answer Dr. Copland's question as to urinary diastase. I have not had any experience with it myself, but have talked to men who have used the test, and since there is more urinary diastase than blood diastase, the test should theoretically be just as good.

PHYTOBEZOAR OF THE STOMACH ASSOCIATED WITH GASTRIC ULCER*

C. P. RUTLEDGE, M. D.
SHREVEPORT, LA.

Foreign bodies in the stomach are of two classes:

1. Those swallowed in their already formed state, such as marbles, coins, screws, nails, nuts or glass.
2. Foreign bodies which take on formation after being swallowed such as hair, persimmons, food particles, vegetable fibers and specific liquids.

Bezoars come under the second class. Bezoar is a Persian word and is defined as: "A concretion of various characters from the stomachs of different animals; formerly highly valued as a medicine."

CLASSIFICATION

1. Trichobezoar
2. Phytobezoar
3. Trichophytobezoar
4. Shellac bezoar

1. The trichobezoar, or hair ball, is the most common and is usually found in young girls or highly nervous individuals who bite off their hair and swallow it. Some of them roll it into balls and swallow. This type of bezoar forms very gradually and may be months or years in the process of formation; is added to, from time to time and frequently almost completely fills the entire stomach.

2. The phytobezoar, which is commonly known as the food ball, is composed of skins, seeds, vegetable and fruit fibers, persimmons, prunes or celery.

3. The trichophytobezoar, or hair food ball, is composed of hair mixed with food particles and forms gradually, very much as does the trichobezoar.

4. The shellac bezoar is, as the name implies, composed of shellac which is precipitated in the stomach after the drinking of strong alcoholic solutions of shellac. This is the least common of the bezoars and is usually seen in

painters and furniture finishers who use strong alcoholic solutions of shellac.

I will deal principally with the phytobezoar especially the one composed of the persimmon. The first authentic case of persimmon bezoar was reported by Outten⁸ in 1894. Since then about 35 cases have been reported in American literature and many in the Japanese but few, if any, in other countries. This is probably due to the fact that the persimmon is very common in America and Japan and very scarce or not present in other countries. The phytobezoar is formed entirely at one time and is not added to as in the case of the hair ball or food hair ball. The food ball forms very soon after the ingestion of the food and attains its full size at that time. It may remain in the stomach for days, weeks, months or years but never grows larger.

ETIOLOGY

The conditions under which the persimmons are eaten apparently have quite a lot to do with the formation of the bezoar. Careful study of the reported cases shows that the individual ate the fruit in liberal quantities while hungry or fasting and on a practically empty stomach. No other food was taken with the persimmons and no water was drunk at the time of the meal. This type of bezoar is usually seen in the farmer, hunter, golfer or outdoor man who, while on a tramp, and hungry, eats a large quantity of this rather luscious fruit on an empty stomach without drinking water or other fluids. Persimmons have a great gum and pectin content and when eaten on an empty stomach, at the time when the gastric content is rather concentrated with hydrochloric acid, "precipitation" of the pectin and gums is favored, which during their solidification incorporate the fibers, skins and seed causing the formation of the bezoar.

SYMPTOMS

These are essentially the same as in acute gastric ulcer or acute gastroenteritis. Pain is a frequent symptom. It may come on soon after the ingestion of the offending food or may be delayed for hours or days. Gastric discomfort is continuous; there may be some periods of relief but the patient always feels

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

uncomfortable; epigastric pain is present with or without tenderness and is often associated with muscle rigidity, at times very typical of gallbladder disease. There is usually no loss of weight although the condition has existed for months or years. The more or less constant pain is aggravated by food but sweet milk sometimes gives temporary relief. My patient had to resort to milk diet to obtain any appreciable relief. Nausea and vomiting are sometime more or less constant; my patient complained of neither.

DIAGNOSIS

A carefully taken history will usually suggest the diagnosis. Palpation may disclose an epigastric mass which is movable, usually not tender and changes position very readily as the patient changes his position. There may be some difficulty in getting a concise history as the patient may not think the persimmon meal of any importance as he has had many previous such meals without discomfort. Phytobezoars have been mistaken for floating kidney, carcinoma or gastric tumor, hair ball, movable spleen, polyp or adenoma.

Roentgen ray examination with a careful history is usually conclusive but Hart⁶ reports one case in which three series of roentgen ray examinations did not reveal the phytobezoar and the surgeon missed it on doing a gastroenterostomy. It later caused an intestinal obstruction after passing through the gastroenterostomy opening and was removed surgically. Gastric ulcer is a frequent finding and may or may not pre-date the formation of the bezoar. In my case it undoubtedly occurred after the formation of the phytobezoar purely from mechanical irritation. This patient, prior to his enormous persimmon meal, gave no history or symptoms of ulcer and after removal of the phytobezoar has had no symptoms suggestive of ulcer.

ROENTGEN RAY EXAMINATION

Examine with the use of the barium meal, fluoroscopic screen and films as in routine gastrointestinal study. As the meal enters the stomach it can be seen to run around a movable mass which is present near the pylorus. As the stomach fills, this mass can be seen to rise to-

ward the upper half of the stomach and soon occupy a position in the gas bubble, (patient erect). This mass will shift positions as the patient is rolled from side to side and when in Trendelenberg position it will migrate back to pylorus; sometimes it can be palpated, sometimes not. An ulcer is often present on the lesser curvature near the pylorus. Examination made six hours after ingestion of barium meal will usually show the stomach empty of the meal but frequently the barium coated phytobezoar can be outlined on the film.

TREATMENT

The treatment is essentially surgical. Other methods of treatment have been tried but are considered dangerous. Some patients have been treated by giving hydrochloric acid orally which at times caused disintegration of the mass which passed through the intestinal tract in several lumps or small particles. This method is to be condemned as there is the possibility of one or more of these broken up pieces lodging and causing intestinal obstruction. The phytobezoar has also been broken up by palpation and the small masses seen to pass through the intestinal tract. This method is also inadvisable as there is a danger of perforating a gastric ulcer which may be present and also the possibility of intestinal obstruction. The ulcer is usually not treated and will generally heal after the mass is removed. Some surgeons excise the ulcer and remove the bezoar through this incision.

Always look for more than one mass and make thorough exploration of the stomach to see that none of the bezoar remains. The masses are sometimes multiple. Some surgeons advise an opening large enough to admit the hand so that the stomach can be examined manually from end to end.

Prophylactic treatment is advisable to avoid the formation of bezoars. Never eat large quantities of persimmons while fasting or on an empty stomach. Eat in moderation and preferably with other food and water. Masticate well and do not swallow the seeds.

CASE REPORT

J. G., a white man, aged 24, farmer, a patient of Dr. T. P. Lloyd, was referred for roentgeno-

logic examination on December 7, 1936, with a clinical diagnosis of gastric ulcer. He had been in excellent health until about ten days ago when he awoke at 2 a. m. with severe pain in the epigastrium. He was not nauseated and did not vomit. On the afternoon previous to this attack, while out hunting, he ate an enormous quantity of persimmons on an empty stomach, as he was very hungry. Immediately after his attack of pain he took castor oil and followed with calomel and epsom salts. Bowel movements were black for one day following this purgation but have not been since then. Pain in epigastrium has been constant since the initial attack, is aggravated by deep breathing and food except milk which gives temporary relief. He has lost no weight and appears well nourished. The past and family history show nothing of importance.

Physical examination by Dr. Lloyd: The patient is a fairly well developed and nourished white male about 24 years of age, apparently not acutely ill. Heart is regular in rate and rhythm, no apparent cardiac enlargement. Heart sounds are clear and no murmurs are heard. Chest shows nothing abnormal to palpation, auscultation or percussion. The abdomen shows some rigidity in epigastrium and left hypochondrium with definite tenderness over these regions. No abnormal masses are felt and liver and spleen are not enlarged. Extremities are negative. Blood examination and urinalysis show no marked deviations from normal. Roentgenologic examination with barium meal on December 7, 1936 revealed a large filling defect in lower half of stomach which gradually migrated to the upper half as the stomach became filled with the barium mixture (patient erect). This was interpreted as a movable mass which changed position upon palpation or movements of the patient. No mass could be felt with the palpating hand although its outline could be plainly seen on fluoroscopic screen.

A large penetrating ulcer was clearly outlined on the lesser curvature slightly prepyloric and very definite localized tenderness and muscle rigidity were noted upon pressure over this area. A film made six hours after ingestion of the barium meal showed stomach empty except for a barium coated, pear-shaped mass. This shadow was cast by the barium coated phytobezoar and had entirely disappeared on the 24-hour film.

The conclusions from the roentgenologic examination were: "Phytobezoar (persimmon) in the stomach associated with a perforating ulcer on lesser curvature about two inches proximal to the pylorus."

Surgical removal of the bezoar was advised. On

December 10, 1936, Dr. J. A. Hendrick removed a persimmon bezoar three and one-half inches long by two and one-half inches in diameter. He also found a large penetrating ulcer present over the lesser curvature, slightly prepyloric. The ulcer was not excised or treated in any way. The patient made an uneventful recovery and is now free of any gastric symptoms. After the mass was removed close examination showed a more or less cylindrical dark brown mass with its lower end assuming the shape of the pyloric end of the stomach. On its superior margin there was a rather jagged and roughened edge corresponding with the site of the ulcer seen on lesser curvature; no doubt this roughened edge by its constant friction both caused and aggravated the ulcer.

SUMMARY

We should all become phytobezoar conscious as I feel that many of these cases are being erroneously diagnosed or not diagnosed at all. A good history and careful roentgenologic study should detect practically all persimmon phytobezoars.

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DISCUSSION

Dr. L. W. Magruder (New Orleans): I think this is a very valuable paper. I have never seen one of these bezcars and I have done roentgen ray work in the South for twenty years. The explanation of them is that persimmons contain a resin, a gum, and have pectin, and these resins and the pectin especially are precipitated by the hydrochloric acid when the stomach is empty. If I remember, Schulze in the Southern Medical Journal in 1932 reported 19 cases, and upon investigation it was found that the content of gum, resin and pectin in the bezoars was 14.1 per cent, which is extremely high. This makes it possible to have the seeds and the fibers incorporated in these substances precipitated by the hydrochloric acid. The pectin in the fruit causes the bezoar to jell, and it is this jelly-like substance which forms the bezoar.

In Schulze's cases, there were nine cases that were diagnosed preoperatively, so I think Dr. Rutledge can compliment himself that he was able to diagnose this so readily with the roentgen ray. I have studied the stomach over a period of many years and have looked for those foreign bodies, but so far have never seen one. I may have missed them, of course, but I never examine a

stomach that I do not keep in mind a foreign body of some kind, and especially bezoars.

Dr. J. M. Gorton (Shreveport): I am interested in that man's ulcer. We have many people going about the country swallowing glass and nails and do not see much trauma to the mucous membrane. It is probably a question of the concentration from the great amount of pectin in the persimmon. The seeds may have something to do with the ulcer. It might be that the boy had the ulcer and this aggravated it, and the treatment, period of rest, acted on the ulcer. I would like Dr. Rutledge to do a G. I. series on that boy again and see how the stomach looks now.

Dr. C. P. Rutledge (In conclusion): Nothing was done for this man's ulcer and after operation, he had no further symptoms from the ulcer. If you had seen the man and seen the jagged edge of the bezoar, you could readily understand that every peristaltic movement pushed it down against the ulcerated area. He has had no symptoms of ulcer since his operation, and had none prior to his swallowing the persimmons. I went into that part of his history very carefully, so personally, I consider his ulcer subsequent to his swallowing the persimmons.

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WELCOME—SOUTHERN

At the time this number of the Journal appears the Southern Medical will be just about ready to commence its annual meeting, this year to be held in New Orleans. To the members of the Southern Medical we extend all good wishes. We hope that you will have one of the best meetings you have ever had; the program certainly looks as if it would be one of the best. We hope you enjoy the pleasures

and hospitality of New Orleans. We hope you will leave with the most pleasant recollections of our city and of our hospitality.

We, the doctors of New Orleans and Louisiana, hope you will have such a good time and learn so much that in the not distant future you will come back again to our historic city and beloved state.

PROBLEM OF TUBERCULOSIS

It is very generally assumed that tuberculosis is being more and more adequately controlled than it was in the past. Figures substantiating this observation show there has been a steady fall in the death rate in the last three decades. It is disconcerting, therefore, to find that the tuberculosis mortality in 46 cities has risen two per cent in the last recorded year, 1936, as contrasted with the year 1935. This is, we believe, the first increase that has taken place in many years.

In so far as tuberculosis in New Orleans is concerned, the death rate per 100,000 population, namely 121, has remained the same for the past two years; there has been no increase nor decrease. There were 618 deaths from this disease in 1936, including residents who died out of town.

It is well known that the death rate from tuberculosis among negroes is high. In New Orleans, in 1936, there were 370 negro deaths as contrasted with 350 the preceding year, an increase of four per cent in the 1936 rate. The negro deaths represent 60 per cent of the total number. It is possibly of some satisfaction to note that the death rate among the tuberculous negro in New Orleans is considerably lower than it is in many other cities, more notably in some of the large cities of the North. The negro death rate is 267 as contrasted with figures in Cincinnati of 444, in Cleveland of 328, in New York City of 329. On the other hand, Birmingham and Atlanta have a rate respectively of 196 and 178.

The death rate among the white population is high. In this city the rate is 68, a rate which is exceeded by only Denver, San Antonio and Los Angeles, all cities to which the tuberculous flock for climatic reasons. It is rather unpleasant to note that New Orleans in total

death rate leads all cities in the country except San Antonio and Memphis; our rate is 121, that of Memphis 140, that of San Antonio 163. There are only three other cities in the country with a rate of over 100: Baltimore, Washington, D. C., and Cincinnati. In some cities the rate is as low as one third that of New Orleans. It is realized and appreciated that a considerable number of deaths in New Orleans occur in the migrants to the tuberculosis wards of the Charity Hospital; however, this probably accounts for only a small percentage of the total number of deaths. The negro cannot be blamed entirely for our high death rate, for the negro rate is materially higher in many other cities than it is in New Orleans. We are faced with the unpleasant fact that we are in the position of third from the top in the death rate of persons suffering from this disease which is preventable and which can be controlled.

What is the remedy? Always there is the same demand—more money! The early closed cases of tuberculosis might well be hospitalized in existent institutions, but it is only with more funds that it will be possible to build sanatoria to take care of the patient with advanced tuberculosis who is expectorating literally millions of tubercle bacilli every day. He should be more or less segregated from the rest of the population. If it would be possible to place in sanatoria these patients who represent dangerous foci for the dissemination of tubercle bacilli, undoubtedly our death rate would be materially diminished. There is a crying need for tuberculosis sanatoria outside of the city and removed from the larger centers of population. This is one of the great needs of our state and, in the mind of the physician, one of the paramount requirements for the adequate control of tuberculosis. It is so important that many in the medical profession feel that this need should take precedence over any other measure requiring money which may come up before the legislature.

SULPHANILAMIDE TRAGEDY

The lay press and the Journal of the American Medical Association, as well as other vehicles for disseminating information, have called widespread attention to the deaths that

have occurred, for the most part in the far South, as result of taking of elixir of sulphanilamide. It would hardly seem necessary to speak of this as a news item; it is well known everywhere both among medical men and the laity, but the tragedy of some seventy people dying as result of a medication which was untried and which apparently was not tested out either on man or animal before being sold to the medical profession and even to the laity, seems to justify a few words of comment.

Apparently the toxic effect of elixir of sulphanilamide depended upon the vehicle for the incorporation of the drug, namely diethylene glycol. The action of this toxic agent is not immediate; sometimes it takes days before it acts and it seems that the most important toxic effect is on the kidneys. Unfortunately there is no known remedy for the drug. There is no way of forecasting what would be the end result after the dose has been taken by the patient, but if anuria develops it may safely be foretold that death will take place in two to seven days.

The tragedy of this whole small catastrophe lies in the fact that there is absolutely no restriction in our present food and drug laws whereby the drug manufacturer may not put out whatsoever he wishes. Certainly the food and drug laws should be amended and strengthened so that an affair like this cannot recur. It is also unfortunate that the medical profession as a whole does not realize that drugs which are accepted by the Council on Pharmacy and Chemistry of the American Medical Association are tested thoroughly, their toxicity determined and the proper dosage obtained. Practically all of the high class pharmaceutical houses now submit their products to the A. M. A. Council before bringing them out to the general profession. Unfortunately there are many smaller wholesale drug purveyors who depend largely for their profits on the sale of patent medicines and who, without check or control, peddle their wares to druggists and doctors, often through untruthful literature and prevaricating salesmen. In all probability, if the safety to life factor be of no import, at least it is reasonably sure that the pharmacologic action of the preparations, brought out under such auspices, is inert or valueless.

If our profession would only realize that until a remedy is official or appears in the new and non-official remedies, certified by the American Medical Association then, and not until then, will it be wise or safe to give the preparation.

CHRONIC DIETARY DEFICIENCY

The man in general practice knows that there is a large group of patients who suffer from vague, indefinite and bizarre symptoms, many of which are ascribed to neurasthenia. The patient is said to be neurasthenic or psychasthenic or even just a chronic complainer. These people are often found to be lean and poorly nourished. They usually have an anemia, not particularly marked, but definite. Anorexia and constipation are almost invariable. Other gastrointestinal symptoms are common expressions such as belching of gas, cardiospasm and vague abdominal discomfort. These patients have marked ease of tire, and fatigue readily. The physician appreciates that they are substandard physically and possibly constitutionally.

A lead to the diagnosis may be obtained if such people say that they are selective in their food intake; that they do not like or will not take certain foods. If the individual happens to be a nursing mother or a person who has some type of alimentary tract disease associated with diarrhea, if she happens to have hyperthyroidism or if recently recovered from a febrile or wasting disease, the possibility definitely exists that she may suffer from a lack of the needed components of the diet which are referred to specifically as the vitamins. Clear-cut avitaminoses produce very definite symptoms but, in a person suffering from a chronic dietary deficiency, the syndrome is not that of

a beriberi or a scurvy but merely "a malnutritive state characterized by a group of non-specific symptoms and signs arising from deficiency in the diet of any, or theoretically, all the essential food factors." These individuals fail to secure an optimal intake of minerals and vitamins. It may be that the result is dependent upon anorexia or food idiosyncrasy or through disease but, under any circumstance, what these people require is not a minimal but an optimal intake of vitamins. One of the most characteristic expressions of avitaminosis is loss of appetite; modifying the diet, the appetite incidentally being stimulated through free feeding of foods high in vitamins, notably A and to lesser extent B and C, will produce an improvement which is sometimes astounding in the subject suffering from chronic dietary deficiency.

Merely because a patient says he does eat a well rounded diet is no reason to assume that such is the case. Certain people need a greater amount of vitamin than do others and they should be fed a correspondingly greater amount in order to secure improvement in their substandard nutritive condition. It is perfectly remarkable at times to see the physical change that takes place in a individual who complains of a gastric disorder and who has cut the food down to what is spoken of as a bland, non-irritating diet if his gastric symptoms are disregarded and he is given food which might be called irritating. If these patients cannot or will not take such a diet then it is well to supplement the food intake by some of the vitamin concentrates or to give them cod liver oil or viosterol. Have them, if possible, take the natural substances high in vitamin content but, if not, insist upon synthetic vitamins or manufactured foods rich in these oft disregarded vital substances.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC
NEW ORLEANS

At the meeting held in November, Dr. Manuel Garcia presented the following paper:

THE ETIOLOGY OF CANCER: A REVIEW

It has long been a respected practice to state that the nature and etiology of cancer remain enshrouded in the deepest mystery. This is a gross injustice to the legion of investigators who, through unremitting devotion and boundless energy, have contributed so much to our understanding of this, the most fascinatingly complex subject in the whole realm of cancer.

Modern pathology teaches that cancer is not a single disease but a generic term applied to a multitude of diseases, characterized by an autonomous, purposeless, unlimited proliferation of the cells in some locality of the body, and manifested clinically by an infiltrative tumor, metastasis, recurrence after removal, cachexia and almost invariably a fatal termination. Thus cancer is a process and not a clinical entity comparable to syphilis. Individual neoplasms vary widely in their conditions of origin, clinical course, physiology, and morphology, in all instances as strikingly as the individual infectious diseases differ from each other.

Cancer is to be regarded in accordance with the original conception of Virchow as one of the three fundamental phenomena of life: namely, normal growth and development; inflammation, the defense reaction to injury, and neoplasia, aberration of growth. All living organisms under the stimulus of physical, chemical and microbic agents react in two ways: by exudation, necrosis, and regeneration, which constitutes inflammation; or by progressive, limitless proliferation that is recognized as neoplasia. Why in one instance neoplasia rather than inflammation should be the issue must be referred to intrinsic cell potencies, which lie hidden in the obscurities of intracellular life. All tests have proved that tumor cells are homogeneous with those of the host and incapable of evoking a systemic defense reaction of any known type. No immunologic reactions occur in cancer, and tumor metabolism differs from the normal only in degree and not in kind. The peculiar respiration of cancer cells is to be regarded as a contribution to general cell physiology, since this property is not constant in malignant tumors; it is shared by embryonal and some normal adult tissues, and its removal may not affect the malignant capacities of the cells. Homogeneity can be further shown by the fact that tumor cells often are able to secrete, as well as the normal cells from which they are derived, by their partial con-

trol through general metabolic and humoral factors, and by their tendency to undergo degenerative changes. Pancreatic island tumors produce insulin; adrenal tumors yield cortin, and erythroblastomas manufacture hemoglobin on a large scale. Cancer increases with overweight and diminishes with exercise. Charlatans temporarily restrain growth by starving their patients. Recently tumor growth has been completely arrested in experimental animals by excluding the essential amino acids from the diet.

More fundamentally, the doctrine of cancer as a universal cell property can be supported by the occurrence of neoplasms in all animals, and even in plants; by the existence of cancers derived from every type of cell in the body; by the exaggerated tendency of embryonal cells to undergo cancerous degeneration, as in atrophic and vestigial organs (chordoma, branchial carcinoma, and hypernephroma).

As Ewing says, oncology cannot be regarded as a department of embryology, but Cohnheim's theory accounts for the frequent development of growths on the basis of embryologic aberrations. "In the field of teratology one can construct an unbroken series from cancer to twins."

Maud Slye's work on heredity of various tumors in mice is usually looked on as having little importance in regard to human cancer (Craver). But there are particular tumors in man that undoubtedly have an hereditary basis, such as neurofibromatosis, entailing a certain risk of neurogenic sarcoma, gliomas of the retina, multiple skin cancer on the basis of xeroderma pigmentosum, osteogenic sarcoma on the basis of multiple enchondromas and exostoses.

A history of the occurrence of cancer, more frequently in families of cancer patients, is usually interpreted as indicating a combination of factors, such as age, occupation, habits, and anatomic and physiologic peculiarities, rather than a true inheritance of susceptibility or resistance to cancer.

Given, therefore, this potentiality for unrestrained multiplication in all living cells, influenced to some extent by genetic, hereditary and embryologic factors, there remains to be seen what factors bring it into activity. The variety of external influences now known to act as exciting agents of cancer is very great and covers almost every class of natural forces. Many act rather directly, and others more indirectly. They include: (a) mechanical trauma, when repeated; (b) physical agents; heat, sunlight, roentgen rays, and radium; (c) chemicals, organic and inorganic; such as arsenic, zinc chloride, coal tar and other products; (d) organic cell products; hormones, and decomposition products of bile acids; (e) bacteria, especially the tubercle bacillus, *B. caviae*

(Lacassagne), the virus of infectious epitheliosis (Shope); (f) animal parasites.

The effect of repeated trauma is seen in mouth cancer from imperfect dentures; of heat, in the cancers of the skin in locomotive firemen; of sunlight, in the skin cancer of sailors and farmers; and of roentgen ray in the fatalities among pioneer radiologists. Epithelioma of the skin has been produced by ultraviolet radiation by Ruffo, and sarcomas have arisen in animals exposed to roentgen rays. Radiation cancer has also been seen as a result of injudicious treatment of pruritus ani and facial hypertrichosis. Painters of radium dials have developed osteogenic sarcoma. The Schneeberg and Joachimsthal miners, in the mountains of Saxony and Bohemia, have cancer in the lungs now principally attributed to the inhalation of emanations of radio-active minerals.

Animal parasites lead, in man and lower animals, to a variety of chronic irritations that produce cancer. In Egypt, bilharzia infestation of the bladder (*Schistosomum hematobium*), is known to be followed by cancer of that organ in a goodly proportion of cases. Ewing has found trichinae in a number of cancerous tongues. Febiger demonstrated that spiroptera, a nematode worm, carried by cockroaches, was responsible for carcinoma in the stomach of rats. Bullock and Curtiss succeeded in producing a sarcoma of the liver of rats by feeding these animals with the eggs of the cat tapeworm. It is needless to say all efforts to isolate a specific microbe as the cause of cancer have been fruitless.

Since the recognition of chimney sweeps' cancer by Percival Pott in 1820, a long list of cancer inducing chemicals, has been discovered. Bungeler administered small doses of indole to mice over long periods and reported the subsequent development of leukemia, aleukemic myelosis, lymphadenosis and lymphosarcoma. Recently Japanese workers have shown that certain neoplasms (cholangioma, adenoma of the liver, hepatoma, and cancer of the bladder) can be provoked by experimental ingestion of relatively simple nitric compounds. Bernard injected small amounts of tar into the femoral marrow of young white rats and reported the development of erythroleukemia.

The prolonged administration of arsenic, as in psoriasis and other skin diseases, may be followed after several years by a pathognomonic type of multiple warty keratoses, a condition which not infrequently serves as the basis for multiple warty keratoses, a condition which not infrequently serves as the basis for multiple epitheliomas.

In the aniline industry, 4 to 5 per cent of the workers develop cancer of the bladder. The tumors appear at any time after two years of exposure. Janssen reports the occurrence of cancer of the bladder in patients with psoriasis who had

been treated with tar over long periods. With the knowledge that aniline is derived from coal tar, investigators used this substance to induce cancer artificially. In 1915 Yamagiwa and Ichikawas were the first to report cancer of rabbits' ears by applying tar. Kennaway of London, noting that crude petroleum from certain geologic strata did not produce cancer, set about to discover the specific substance that was present in the active tar. Following the lead of Block and Dreyfuss, who could produce cancer more effectively by a high temperature distillate of tar, Kennaway succeeded in isolating a compound, dibenzanthracene, from coal tar, which when removed from the tar left it inert.

Cook, a colleague of Kennaway, working at the London Cancer Hospital, began the study of bile acids, having in mind their structural similarity to known carcinogenic agents. By slight chemical changes which might be conceived as taking place in the human body, he succeeded in producing cholanthrene, a substance very similar in structure to dibenzanthracene, and the most powerful known carcinogenic agent. This was an epochal advance because it connected the production of cancer in animals by coal tar with the possibility of a similar substance from bile acid or perhaps some necrosing tissues in the human body.

Kennaway and Cook therefore suggest that under some conditions the sterols normally present in the body, such as ergosterol, cholesterol, and the testis and estrogenic hormones, might undergo such chemical alteration as to become carcinogenic. Moreover, it has been found that some of the carcinogenic derivatives of tar are capable of producing estrus in castrated rats and mice. This leads to the consideration of the influence of hormones in carcinogenesis. Early castration of female mice belonging to strains having a known high incidence of mammary cancer reduces the cancer rate to zero or nearly so. Lacassagne has succeeded in producing mammary cancer in male mice by injecting large doses of an estrogenic substance. He has reported the presence of estrogenic substance in human colostrum and in cyst fluid from the breast of a woman with mammary cancer.

Bagg injected zinc chloride into the testes of fowls and succeeded in causing the development of teratomas during the mating season. By treating these fowls also with injections of anterior pituitary-like substance, he has been able to obtain teratomas at other seasons. There is thus demonstrated experimentally the combined influence of hormonal stimulation and chemical irritation.

Many clinical observations support the contention that cancer is a universal cell property flamed into activity by irritation of a persistent chronic type. Pathology of long duration of any nature

may lead to cancer. Hence the doctrine of precancerous lesions has a sound foundation.

In cancer of the breast there is a high proportion of histories of previous abnormalities of function, such as caked breast, abscess, miscarriages or complete lack of use of the breast. Such observations support the theory of irritation of duct epithelium by retained secretions containing butyric and lactic acids and possibly more specific carcinogenic agents.

When osteogenic sarcoma occurs in patients over fifty years of age, in at least 28 per cent it is on the basis of Paget's disease.

In the large intestine, certain cancers are known to arise on the basis of adenomatosis, polyposis or ulcerative colitis. Cancer of the cervix is mainly a disease of multiparas, with lacerations, erosions and chronic cervicitis.

According to Dean, teratoma of the testis is from forty-seven to two hundred and seventy-three times more frequent in undescended testes.

In the skin, numerous types of abnormalities may be precancerous; pigmented moles, xeroderma pigmentosum, sebaceous cysts, scars of lupus and old burns, and chronic ulcers.

Syphilis probably does not foster the development of cancer in any general sense but only in certain locations, such as the tongue, where syphilitic glossitis and leukoplakia may form the basis for multiple carcinomas. Tuberculosis was formerly believed to offer a certain antagonism to cancer. Yet there is a good percentage of cases of epithelioma on the basis of lupus, and cancer of the lung may develop in the walls of tuberculous cavities. "Tuberculosis appears to have some definite but at present indefinable relation to Hodgkin's disease."

In summarizing it may be said that cancer is a biologic phenomenon exhibited by all living organisms, and is the expression of an inherent property of all cells, an aberration of growth, which is evoked by long continued irritation with agents of all types. Since the neoplastic cells are homogeneous with normal tissue cells, many tumors are governed in their development by genetic, hereditary and embryologic factors. Recent research has shown that in the metabolism of the sterols naturally occurring in the body, and in disturbances of hormones, may reside the intrinsic irritant responsible for many clinical neoplasms. From the clinical standpoint, chronic long standing pathology in any area may be looked on as a potential inducer of cancerous degeneration.

TUMOR CLINIC SHREVEPORT CHARITY HOSPITAL

The first weekly meeting of the Tumor Clinic Staff, following summer vacation, was held in the amphitheatre on Tuesday, October 5, 1937, with Dr.

E. L. Sanderson, Director, presiding and forty-four physicians in attendance. The monthly report for July revealed 88 new patients and 145 return patients for follow-up examination; August, 76 new patients and 195 return examinations; September, 72 new patients and 229 return examinations.

Dr. Harold G. F. Edwards, Assistant Director, presented the following cases and discussion during one of the weekly meetings and the abstract which follows is taken from the many cases presented that month.

INTRA-ORAL CARCINOMA

Case 1. This patient, a white female, 62 years of age, was admitted June 22, 1937 with a complaint of sore mouth. One year ago she first noticed white patches in mouth and shortly thereafter a small ulcer appeared in right side of mouth near second upper molar; this healed following local treatment. About three weeks ago a sore appeared in the anterior floor of the mouth. *Physical Examination:* The oral hygiene was good. Scattered areas of white plaques varying in size 0.5 to 1 cm. were seen on the buccal mucosa and lateral borders of the tongue. In anterior right floor of mouth near frenum of tongue was an ulcerated, hypertrophic growth with sessile base, the tumor measuring 1 cm., with practically no infiltration in the adjacent tissues. The lesion was quite painful. No regional adenopathy was discovered. *Pathologic Examination:* This was made by Dr. Mathews, and revealed squamous carcinoma Grade II. Treatment of this patient consisted of peroral H. V. roentgen rays, administered through a small portal, 2.5 cm., a total of 6,000 r/o in 20 days' time, the fractions being 300 r/o daily. In addition to the radiation treatment the patient was placed on daily doses of one teaspoonful of magnesium sulphate each morning to combat the leukoplakia. By the time the series of treatments were completed the tumor had almost completely melted away and examination three months later showed complete disappearance of tumor with healing in the mouth and no evidence of nodes.

Case 2. A white male, aged 71, was admitted August 4, 1937, with complaint of sore on tongue. Several weeks ago he first noticed a growth under right side of tongue. *Physical Examination:* The mouth was edentulous with an ulcerated, slightly pedunculated growth 2 cm. in size protruding from the under surface of right lateral border of the anterior portion of the tongue, with slight infiltration into adjacent tissue. There was considerable pain. No regional nodes were palpated. *Pathologic Examination:* Epidermoid carcinoma Grade II. Treatment consisted of peroral H. V. roentgen rays, administered through a

small portal, $3\frac{1}{4}$ cm., a total of 6,000 r/o in daily fractions of 300 r/o. Examination six weeks following last treatment revealed complete disappearance of tumor but base not completely healed. Examination on October 12 revealed complete healing of tumor base and no evidence of infiltration or former tumor. No nodes found.

DISCUSSION

Two cases of intra-oral cancer are presented, each having been treated with peroral radiation with complete disappearance of the tumor. Intra-oral cancer occurring on the anterior half of the tongue is generally more radioresistant than cancer of the pharynx or base of the tongue. Transcutaneous x-radiation has not proved entirely satisfactory because of the necessary damage to the skin in order to deliver effective dosage to the tumor. The introduction of shock-proof high voltage equipment has made possible the practical application of a method used by me some sixteen years ago. To Hayes Martin goes the credit for its present popularity. Radium therapy in the floor of the mouth frequently causes necrosis and troublesome cellulitis. Peroral x-radiation either alone or in combination with low radium dosage is ideally adapted for the treatment of cancer of the anterior half of the tongue, floor of mouth, cheek, jaw, tonsil, palate and nasopharynx. With small portals, such as used, necessarily the dosage must be increased to compensate and may reach 8,000 r/o.

CARCINOMA OF BASE OF TONGUE

Case 3. A white male, aged 54, was admitted December 11, 1936, with pain in throat. About three weeks before admission patient states he first noticed a severe, steady pain in left side of throat which radiated to angle of left jaw. *Physical Examination*: The oral hygiene was not good. On the left base of tongue was seen an ulcerated, slightly infiltrated area 1.5 cm. in size with slightly elevated borders with infiltration reaching to the tonsillar pillar. No nodes were palpated. *Pathologic Examination*: This was made by Dr. Mathews, and revealed epidermoid carcinoma Grade II plus. Treatment in this case consisted of high voltage transcutaneous roentgen rays to the right and left base of tongue. The size of the fields were 7.5 cm. circular; daily doses of 219 r/o to each right and left tongue areas were administered, excepting Sundays, until each side had received 23 treatments, a total of 5,037 r/o each. Examination three months following last roentgen ray treatment showed the skin well healed, complete regression and healing of the carcinoma on the base of the tongue. On October 6, 1937, the patient returned for the usual follow-up examination. No evidence of recurrence in the

base of the tongue or adjacent tissues was discovered. In the left neck, however, there was found in the deep cervical area a large node approximately 1.5 cm. in size, fairly well fixed in the deep structures. Aspiration biopsy was done and revealed metastatic epidermoid carcinoma. The treatment of this metastatic node consisted of external H. V. roentgen rays, using 5 cm. circular field and administering 219 r/o daily until 16 treatments, a total of 3,504 r/o. Immediately following the completion of roentgen ray treatments four 3 mg. platinum radium needles and four 2 mg. platinum radium needles were inserted transcutaneously into the deep node. The needles were left in situ 100 hours, until 2,000 mg. hours were administered.

DISCUSSION

Metastatic cancer in the cervical lymph nodes is usually more radioresistant than the original primary intra-oral tumor, excepting the transitional cell and lympho-epithelioma types which usually prove radiosensitive.

Duffy, at Memorial Hospital, found after an analysis of 983 cases of intra-oral cancer, without clinical evidence of metastasis in the cervical node, that 80 per cent of these patients had not developed metastasis at the end of three years. In our Clinic prophylactic neck dissection is not advised and prophylactic x-radiation to the neck nodes is regarded as wasted. Once carcinoma has spread to the neck nodes, secondary to squamous carcinoma, it can never be cured by any form of external radiation alone, whether it be radium packs or fractionated doses of high voltage roentgen rays. Cancer in neck nodes rapidly forms keratin, and undergoes degeneration or liquefaction. Small nodes may well be handled by exposure through a small incision in the skin and subcutaneous tissues and radon implants or radium element implants inserted into the node. Large nodes, in which apparently the cancer has already gone through the capsule, are first treated with high voltage roentgen rays, administering upward to 5,000 r/o, immediately following this, transcutaneous implantation into the mass of nodes is done with long platinum radium needles in a dosage sufficient to bring the total radiation up to not less than seven or ten erythema doses to the mass of nodes. In lympho-epithelioma or transitional cell carcinoma we feel that the nodes which are usually multiple may be adequately handled and completely sterilized with transcutaneous high voltage in sufficient dosage.

Dr. Sanderson invites all physicians in the Shreveport area to visit with us on Tuesday of each week, the meeting of our Clinic being held at 12:45 o'clock.

Harold G. F. Edwards, M. D., Reporter.

FACULTY CLUB
LOUISIANA STATE UNIVERSITY
MEDICAL CENTER
NEW ORLEANS

The first meeting of the academic year was held Friday, October 29, with the President, Dr. Phillips J. Carter, presiding.

Dr. Robert H. Bayley, of the Department of Medicine, presented the following paper:

APPLICATION OF THE SOLID ANGLE AND THE
MAGNETIC SHELL TO THE ANALYSIS OF
THE PRECORDIAL LEAD

It was pointed out that the Einthoven method of analysis of the three standard leads, the use of the vector and the triangle, would not apply for the analysis of the precordial lead, a point repeatedly emphasized by F. N. Wilson, of Ann Arbor, Michigan. Reference was made to Wilson's work, offering irresistible experimental and theoretical proof that the excitation phenomena of cardiac muscle in situ may be defined as an imaginary uniform magnetic shell. Physical laws define the potential at any point in a homogenous volume conductor surrounding such a shell as proportional to the solid angle subtended at that point by the shell.

The shell and the angle were then used to predict the form and the meaning of the critical value of a normal precordial electrocardiogram taken by a lead in which the exploring electrode was presumably placed at a point on the precordium over the apex of the ventricular chambers. The theoretical curve was then compared with an actual curve taken under comparable circumstances.

The discussion was supplemented with lantern slide and plate projection.

DISCUSSION

Dr. James L. Gouaux emphasized the value of the precordial lead in facilitating diagnosis of anterior myocardial infarctions, as contrasted to its failure to aid in cases with posterior infarcts.

Dr. Phillips J. Carter, of the Department of Obstetrics, presented the following subject:

THE DIAGNOSIS OF PLACENTA PREVIA BY
MEANS OF THE ROENTGEN RAY

Placenta previa is one of the most dangerous complications of pregnancy, and its diagnosis by means of the roentgen ray has been a great achievement. We are now able to ascertain its presence in many cases with a positiveness not possible when our whole reliance must be placed on symptoms and physical signs. Occasional cases have been diagnosed roentgenologically when the placenta contained calcium, but this is unusual. By the injection of radio-opaque substances intravenously, into the amniotic sac or into the blad-

der, the placenta may be visualized. Thorotrast intravenously was first used experimentally; however, its deposit in the placenta interferes with fetal nutrition. Later, strontium iodide was injected into the amniotic sac through the anterior abdominal wall, but this resulted in several fetal deaths. Uroselectan B. injected into the amniotic sac had a tendency to produce premature labor.

Instillation of sodium iodide into the bladder has been successful, the placenta producing a filling defect which pushes the presenting head a distance of two to four centimeters above the bladder wall. The central and partial types of placenta previa may be determined by the size and position of the filling defect. The use of sodium iodide has been followed by signs of bladder irritation. Skiodan (methiodal) may be used either intravenously or by injection into the bladder without harmful effects, and gives a film which is much clearer than one obtained by the other methods mentioned above. Illustrative roentgen ray films were presented.

DISCUSSION

The therapeutic implications of this mode of diagnosis were discussed by Dr. C. P. Cabibi; and possible sources of error, such as pressure from the sigmoid colon, by Dr. Amedee Granger and Dr. Walter Levy.

THE CAUSE OF DEATH FROM LUNG ABSCESS

Dr. James D. Rives, of the Department of Surgery, presented this paper which will appear in full elsewhere in the near future.

DISCUSSION

Dr. Louis A. Monte, in discussing the handling of lung abscesses from the medical standpoint, stressed the desirability of close cooperation between surgeon, bronchoscopist, and internist.

Geo. M. Decherd, Jr., M. D., Sec.-Treas.

HIGHLAND SANITARIUM

The Highland Sanitarium staff met on Thursday evening, October 21, 1937. After dinner the scientific program was held in the Clinic Building.

Dr. T. M. Oxford gave an interesting paper on treatment of fractures of the hip. It was gratifying to note the progress that has been made in this field in the past two years, especially in treating intracapsular fractures. Cases were presented in which closed reduction was made, either a flanged pin or small nails uniting the body with the head of the femur. This is all a closed operation, the hip joint not being entered. Dr. Oxford stated that the mortality and morbidity is greatly lessened by this method; the end results obtained are superior to previous treatment of this type fracture.

Dr. C. P. Rutledge reported on the recent meeting of the International Congress of Radiologists in Chicago. He gave a brief resumé of the therapy and roentgenologic technic that were discussed in this meeting.

Dr. D. H. Duncan reported on a meeting of the Southern Psychiatric Association which met recently in San Antonio. Especially interesting were his reports on the use of insulin shock therapy in schizophrenia, and narcosis in the treatment of excited phase of the manic states.

After a discussion of the deaths for the past month the meeting was adjourned.

E. D. Rowland, M. D., Sec.

NORTH LOUISIANA SANITARIUM STAFF MEETING

The staff meeting was called to order by the President on October 26, 1937, with about thirty members present. After the disposal of routine business attention was turned to the scientific program.

Dr. Lucas presented a patient with renal rickets who was admitted to the hospital for his terminal illness. The case had been extensively studied in the larger clinics over the country. The child was a premature infant and was sick since it was eight days old, dying at the age of nine years. The case was presented because of its unusual occurrence and its striking bony deformities. The case was discussed by Dr. Stamper.

Dr. Stamper presented a case of hypoplastic kidney in a patient 22 years of age. The patient gave a history of pain in the right lumbar region since seven years of age. At the age of 15, the patient obtained relief of her symptoms by indulging in athletics. After her marriage at the age of 19, the symptoms recurred and during a pregnancy, she developed a persistent pyelitis. Roentgen ray examinations of the kidneys on the flat plate and pyelogram appeared normal. On cystoscopy, there was a mild hydronephrosis. Function apparently was good. At operation, a hypoplastic kidney was found and in freeing the kidney, the upper pole was found to be ischemic and very much like a suprarenal tumor. This deformity was found to be due to a constriction of the upper pole of the kidney. Patient's postoperative period was uneventful and completely devoid of symptoms complained of prior to operation.

H. M. Trifon, M. D., Sec.

HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Medicine, Dr. John H. Musser presiding.

Spontaneous Pneumothorax: A Case Report (Dr. John H. Musser, Department of Medicine): This

is a case of a man who, twenty-four hours prior to having extremely severe pain in his chest, had lifted a very heavy weight. That night he had what he described as a "funny feeling" in his chest which did not bother him very much but it continued to grow worse and finally in about twenty-four hours was extremely severe. The physical examination disclosed a pneumothorax which was confirmed by roentgen ray.

Pneumothorax is classically considered to be abrupt in onset and in practically all instances to be tuberculous in origin. It should not be forgotten, however, that the statistics as to the frequency of natural pneumothorax were compiled before the general use of the roentgen ray in the diagnosis of pulmonary conditions and that the condition was often overlooked except in patients who were treated for tuberculosis. I do not think that 90 per cent of all cases of pneumothorax are of tuberculous origin nor do I think 95 per cent of sudden onset with dramatic symptoms. On the contrary I have followed over a long period a goodly number of individuals who have had pneumothorax once or several times and tuberculosis was not present nor has it developed. Likewise I think that the statistics of Pepper, which show that in 23 per cent of cases the onset was insidious, represent the true incidence of the way the disease started.

Diagnostic Cardiac Problem: A Case Report. (Dr. William A. Sodeman, Department of Medicine): This patient, B. D., aged 45, considered herself in good health until one year ago when she began to experience breathlessness and palpitation. Nervousness and apprehension developed, and a tremor became evident. Edema of the feet made its appearance. She perspired more this summer than ever before. Loss of weight was noted and has reached 35 pounds. Past history was unrelated except for growing pains which were experienced as a child.

Physical examination disclosed a patient much as you see her here. The thyroid gland was smooth, symmetrically enlarged, with a single nodule in one lobe. Joffroy's sign was positive. There was no exophthalmos. The blood pressure was 140/90. The neck veins were distended and the heart enlarged. A systolic murmur was heard over the pulmonic area and mitral area. The heart was hyperactive. The rate varied from 85 to 116. Evidence of pitting edema was present. The skin was smooth and of fine texture. The basal metabolic rate was reported at 47 per cent and repeated at 43 per cent. The electrocardiogram disclosed definite evidence of myocardial disease. This patient displayed tremor and tumor. Tachycardia was inconstant and exophthalmos absent, two facts which threw doubt on the diagnosis of toxic goiter. The obvious clinical evidence of

hypermetabolism was confirmed by the basal metabolic rate which was repeated because of the frequent inaccuracy of the first determination. These high values appear to establish the diagnosis of toxic goiter.

Although thyrotoxicosis is given as one of the etiologic types of heart disease, the absence of anatomic evidence, the overwhelming occurrence of heart disease in thyrotoxicosis in the older age brackets and the increase in the occurrence of cardiac failure with the duration of hyperthyroidism has led to the prevalent opinion that thyrotoxicosis does not cause heart failure in the normal heart. However, when it supervenes in a patient whose heart is already impaired but compensated, the added strain may be sufficient to precipitate heart failure. In younger patients the underlying primary heart disease is usually rheumatic, in older persons either hypertensive or arteriosclerotic. It may be syphilitic. In any case it may be subclinical.

We were, therefore, not content with the diagnosis of thyrotoxic heart disease. The history of growing pains, the systolic mitral and pulmonic murmur, accentuation of M_1 and P_2 strongly suggested rheumatic heart disease. Several members of the staff have heard a diastolic mitral murmur. Roentgen ray examination disclosed, a prominent pulsation in the region of the pulmonary conus. The heart in thyrotoxicosis, however, is notorious for its similarity to the rheumatic picture. Systolic and even diastolic murmurs and thrills have been found, as has been the dilated pulmonary conus in thyrotoxic patients with normal hearts at post-mortem. The rheumatic diagnosis is, therefore, inconclusive. Hypertensive heart disease is ruled out by the blood pressure. The presence of syphilis could not be established. While the clinical diagnosis of arteriosclerotic heart disease in a picture such as this would rest largely on exclusion of other types, the electrocardiographic changes favor this diagnosis. In summary, we had a patient with possible rheumatic or arteriosclerotic heart disease, presumably precipitated into mild congestive failure by hyperthyroidism.

Any procedure which could differentiate hyperthyroidism from the elevated metabolism of congestive heart failure and the thyrocardiac findings from rheumatic heart disease would be helpful. We had such a procedure in the administration of iodine, which reduces the metabolism in thyrotoxicosis and tends to make the cardiac findings of thyrotoxicosis alone disappear. Following the work of Means, we have started the administration of iodine in this patient to settle these points.

Pernicious Anemia: A Case Report. (Dr. G. F. Ellinger, Department of Medicine): This patient came to the clinic about six months ago. He stated that he had known he had pernicious anemia since

1927. However, he had taken only a minimal amount of treatment and at the time we first saw him he presented the textbook symptoms and signs of pernicious anemia with subacute combined degeneration of the cord.

The features of this man's illness which I wish to discuss are the red blood count, mean corpuscular volume and reticulocyte determinations done at frequent intervals throughout his treatment.

It is characteristic of the anemia of pernicious anemia that the mean corpuscular volume is increased, that is, the blood shows a macrocytic anemia. As the disease process improves under treatment, the mean corpuscular volume comes down to normal. At the start of treatment in this patient, the mean corpuscular volume was 197.6 cubed microns, reticulocytes 6.4 per cent, red blood cells 1,240,000. He received 10 c.c. of Lilly's concentrated liver extract every two to four days, a total of 130 c.c. over a period of seven and a half weeks. At the end of this time his red blood cells had increased to 4,500,000 and his mean corpuscular volume had dropped to 106.8.

I am showing the results of three other patients, two with pernicious anemia, one with sprue, all similarly treated.

As you see, in this patient, the mean corpuscular volume started at 166 per cent of normal, the red blood count at 65 per cent of normal. Under treatment at the end of about three weeks, you can see these values coming within normal limits.

Patient two started with 52 per cent of the normal red blood count, about 130 per cent the normal mean corpuscular volume and at 26 days, when she deserted, her values were definitely coming toward normal.

Patient three with a red blood count of 900,000 (18 per cent of normal) with a 0.6 reticulocytes and a mean corpuscular volume of 102.8 (120 per cent of normal). On the fourth day, after a 20 c.c. dose of liver, the mean corpuscular volume jumped to 146.6 with a reticulocyte count of 42.4. At the end of one month's treatment, she was discharged with a red blood count of 4,740,000, a mean corpuscular volume of 89.3 and reticulocytes of 1 per cent, all values coming back within normal range.

The interesting thing here is the temporary increase in mean corpuscular volume occurring on the fourth day after treatment was started. This occurs at the time of the peak of the reticulocyte increase. Dr. Wintrobe had demonstrated this change in many cases also.

It has been shown that the diameter of the reticulocyte in any blood specimen tends to be greater than that of the normal red blood count in that specimen. This increased mean corpuscular volume, corresponding to the increased reticulocyte count seems to indicate that the mean

corpuscular volume of reticulocytes is also greater than that of the normal and, up to a certain point, greater than that of the macrocytic pernicious anemia cell.

Apparently this increased mean corpuscular volume is directly related to the height of the reticulocyte peak reached and the initial mean corpuscular volume of the cells. Given a sufficient per cent of reticulocytes, in a blood with macrocytosis, if the macrocytes are not already the biggest cell nature can produce in that individual, one will find this temporary increase in mean corpuscular volume.

Congenital Hemolytic Jaundice: Two Case Reports. (Dr. G. E. Burch, Jr., Department of Medicine:) E. B., white male, aged 15 years, was admitted to the Clinic on June 14, 1937, complaining of weakness in the ankles and calves of his legs. This weakness occurs suddenly and at irregular intervals. There are no associated pain, vertigo, headaches or other related symptoms. For the past six years, however, he has been known to have a large spleen, intermittent attacks of jaundice and a tendency to prolonged bleeding. He first learned of his illness when his mother was found to have hemolytic jaundice. For the four and a half years immediately following his learning of the existence of his disease he received roentgenologic treatment with radium to his spleen, but without any beneficial effects.

The remaining portion of his history is irrelevant except that his mother's father had jaundice and a large spleen. This condition was diagnosed as hemolytic jaundice. His mother has two apparently unaffected sisters. The entire physical examination failed to present any significant findings, except for an icteric tinge to the patient's conjunctivae and skin, pallor of the mucous membranes, and a smooth diffusely and moderately enlarged spleen. The urine, stool and Fishberg concentration tests were normal. The Wassermann was negative. The blood picture was as follows: Hemoglobin 9.75 gm. (57 per cent Newcomer), red blood cells 3,510,000, white blood cells 7,750, small monos 50, large monos 2, neutrophils 42, eosinophiles 5, basophiles 1; stripping—marked, anisocytosis—moderate, poikilocytosis—moderate, polychromatophilia—moderate, platelets 121,380; hematocrit 30.7, mean corpuscular volume 87.5 (4 months previously the mean corpuscular volume was 70) mean corpuscular hemoglobin 27.8, mean corpuscular hemoglobin concentration 31.9, reticulocytes 10.5%; cell diameter 6.07 microns, cell thickness 3.1 microns: Relation of thickness to diameter 1:2. Fragility began at 0.48, complete at 0.30, icterus index 100, coagulation time three and a half minutes, bleeding time four minutes.

On admission the patient was given ferric ammonium citrate (crystals) 2 gm. three times a day.

It is interesting to note the change in volume of the erythrocytes following the use of iron. The patient apparently was also suffering from iron want when he was first seen. The correction of this deficiency resulted in a revision of the mean corpuscular volume to that which is expected in uncomplicated congenital hemolytic jaundice.

Case 2. Mrs. L. B., aged 37, the mother of E. B. (Case 1), admitted June 14, 1937, has suffered from anemia, jaundice and weakness since a child. She did not know that she had a splenomegaly and was suffering from congenital hemolytic jaundice until six years ago. Her health has varied little until the birth of her son when she had three convulsive seizures. The exact nature of these is unknown. At present she feels well except for an ulcer on the posterior aspect of her left heel. Her father was said to have had hemolytic jaundice. The patient does not know whether her grandparents or great grand-parents were similarly afflicted.

The physical examination was found to be essentially normal except for jaundice, pallor of the mucous membranes and a slightly enlarged spleen. The Wassermann and urine were normal. Fishberg concentration was 1.016, 1.015 and 1.014. Blood picture: Hemoglobin 55 per cent (Dare) or 8.8 gm., red blood cells 3,000,000, white blood cells 7,000; anisocytosis—moderate, poikilocytosis—moderate, small monos 25, large monos 2, neutrophils 72, eosinophiles 1; coagulation time three and a half minutes, bleeding time four minutes. Icterus index 50; fragility—hemolysis began at 0.48 and ended at 0.30. Hematocrit 28.3 per cent, mean corpuscular volume 94.5, mean corpuscular hemoglobin 29.4, mean corpuscular blood concentration 31.1. We were unable to have the patient return for more complete studies.

The characteristics of congenital hemolytic jaundice are as follows:

A. Clinically:

1. Anemia.
2. Non-obstructive jaundice.
3. Splenomegaly.

B. The Erythrocyte.

1. Decrease in diameter.
2. Increase in thickness.
3. "Spherocytosis".
4. Normal or increased volume.
5. Decreased resistance to hypotonic NaCl solution.
6. Normal concentration of hemoglobin.
7. Increase in reticulocytes.

The "spherocytosis", usually 10 to 25 per cent, is said to be as pathognomonic of the disease as sickled erythrocytes are of sickle cell anemia. The hemolytic tendency found in this disease is directly related to the degree of spherocytosis. The clinical syndrome, anemia, hemolytic jaundice, and

splenomegaly, is the result of the removal of these abnormal spherocytes from the circulation by the spleen. The treatment is splenectomy. This does not remove the primary disturbance. Cases followed after splenectomy continue to have as high as 16 per cent spherocytes. This has proved to be true as long as 16 years after removal of the spleen. Removal of the spleen does, however, result in a disappearance of the clinical manifestations of hemolytic jaundice.

A Modern Treatment for Peptic Ulcer with Hemorrhage: A Case Report. (Dr. C. R. Jones, Jr. Department of Medicine): The use of liquid colloidal aluminum hydroxide in the treatment of peptic ulcer has been on a sound basis for several years. The administration of this drug by means of a continuous intragastric drip is a more recent development, but the use of the continuous intragastric drip of colloidal aluminum hydroxide as a means of arresting massive gastroduodenal hemorrhage is a very recent advance; in fact it is my purpose to show tonight the first patient to be treated by that method recorded in the literature.

Briefly, this is his story. He was 33 years old, and for a year he had had several periods during which he suffered from epigastric pain relieved by food. Five days previous to admission he had started to become weak and pale and shortly began to pass tar colored stools. He rapidly became so weak that he was unable to stand up and was brought to the hospital in a most depleted state. Shortly after admission there was expelled a large amount of coffee ground vomitus. The upper portion of his abdomen was generally tender but not rigid. He was treated for shock and given a transfusion of 450 c.c. of citrated blood on the day of admission and 250 c.c. four days later. Aluminum hydroxide was started, 4 c.c. every third hour, on October 23. He received about eight such doses in the first 24 hours of aluminum hydroxide treatment and was then given the medication by a continuous intragastric drip which was continued day and night for seven days. In this time he received between 250 and 275 c.c. daily of colloidal aluminum hydroxide diluted so as to make about a 25 per cent solution. Several aspirations through the nasal tube showed from zero to 5° of free hydrochloric, but after the first day no blood was detected. He became rather constipated but as he was getting very little food by mouth no effort was made to cause a bowel movement. After five days of the continuous drip he had a movement consisting largely of the tar colored material, following which his stools remained negative for occult blood. He was up and around in 12 days after admission. The red count was 1,775,000 on the day of admission and 19 days later on discharge to the out-patient department, it was 3,

505,000. On November 30, his red cell count was 5,325,000.

All methods that are now in general use for the treatment of massive hemorrhage, such as this patient had, have the drawback of a quite considerable mortality rate. The feeding method of Meulengracht showed great improvement over the older methods and it was reasoned that the utilization of the acid and pepsin prevented the clot from being digested. Be that as it may, the situation here was that we had a patient sick unto death from hemorrhage and a method of keeping the free hydrochloric acid continuously neutralized by a fluid that had also a beneficial astringent property. The drug has, as far as is known, no undesirable properties; it is a neutral, non-absorbable, non-toxic, astringent antacid.

Woldman recently reported 21 consecutive severe cases of this nature, all of whom recovered following the exhibition of this drug by this method.

It is too early to say what will be the eventual status of this method of treatment, but it bids fair to be the method of choice.

Reduction Diets in Obesity: A Case Report (Dr. W. H. Gillentine, Department of Medicine): L. C. G., white female, aged 18, was admitted to the Clinic on February 15, 1937, complaining of obesity. Developmental History: The patient weighed six pounds at birth. At the age of six months a suppurative cervical adenitis was incised and drained. The lower central incisors were cut during the fourth and fifth months. Menstruation began at the age of twelve and a half years, is regular, scanty and lasts for four days. The patient from childhood on has been overweight. Family History: The patient's mother, maternal grandmother and great-grandmother and paternal second cousin have had diabetes. The patient's sister, mother, father, two brothers are all obese, the average weight being over 200 pounds. Physical Examination. The patient is 5 feet 6¼ inches tall, weighs 261 pounds. The blood pressure is 108/70. The patient's obesity is distributed principally around the breasts, sides of the body, hips and thighs, especially as a trochanteric fat pad, and also in the proximal joints of the extremities. A posterior cervical fat pad is found. The breasts contain normal glandular tissue. The lungs, heart and abdomen are negative. The panniculus adiposus hangs as an apron in front of the pubis when the patient is in the erect position. The external genitalia are small and the uterus apparently smaller than normal as determined by an unsatisfactory rectal examination. The reflexes are normal but sluggish.

Laboratory: Blood cytology was normal. Sugar was found in the urine on February 18 and 19. At this time the basal metabolic rate was plus 3 per cent. Roentgen rays of the pituitary revealed a

sella turcica larger than normal, but without evidence of bony erosion. A one hour two-dose sugar tolerance test was done and showed no decrease in sugar tolerance. Body measurements were taken. The patient's obesity was regarded as being of gonadal distribution, secondary to pituitary hypofunction because of the fat distribution, the long lower body measurement, and the decreased basal metabolic rate. No studies of estrin or gonadotropic excretion were done to confirm the diagnosis. The appearance of sugar in the urine was regarded as due to a decrease of pancreaticotropic hormone of the pituitary or to a decreased renal threshold for glucose which sometimes accompanies gonadal obesity, or possibly to the familial tendency (endocrine) for diabetes. The patient's basal metabolic rate was plus 11 per cent on April 8, 1937, two weeks after beginning the administration of thyroid, one grain three times a day. At this time the patient was given a diet containing 1375 calories, 66 grams of carbohydrate, 66 grams of protein and 96 grams of fat. In addition, the patient had between June 11, 1937 and August 23, 1937, 1000 rat units of anterior pituitary-like hormone, 500 rat units of the maturity factor, 1500 rat units of gyantrine. At the end of this time her basal metabolic rate had dropped in spite of the thyroid to —11 per cent. Between March 23, 1937 and October 19, 1937, the patient lost a total of 61 pounds, the reduction being slow to avoid skin sag. As a result the following decreases in circumferential measurements were noted: Bust $5\frac{3}{4}$ inches, waist $4\frac{1}{2}$ inches, anterior superior spine $10\frac{3}{4}$ inches, trochanters $5\frac{1}{4}$ inches, thighs 1 inch, legs 1 inch, arms and forearms $\frac{1}{2}$ inch. This distribution of weight loss is regarded as being significant in that the replacement therapy has apparently reversed the peculiar distribution of obesity associated with this glandular deficiency.

Essential Hypertension in a Young Adult: A Case Report (Dr. Peter Everett, Department of Medicine): This patient, Y. S., white female, aged 25, was seen for the first time in the Clinic in February, 1937. Her history was that on December 17, 1935, she had an apoplectic stroke (the same day her father had one) and remained unconscious for three days. During the first five hours she had five convulsions. She was seen by a physician who attributed the condition to "nervousness and kidney trouble," telling the patient the blood pressure was 270 mm. Upon regaining consciousness she had diplopia for a week.

For two years she had been treated with vasodilators and sedatives without any beneficial effect upon the blood pressure. The systolic pressure has always been above 200 mm. mercury and the diastolic always above 100 mm. mercury. The thyroid was irradiated because the physician thought the

hypertension was associated with thyroid disease. About this time economic conditions became such that she had to come to the clinic for further care.

On admission the blood pressure was 208/104. The urine showed a faint trace of albumin and a fixation of specific gravity between 1.015 and 1.018; at no time were there casts or red blood cells. There was no cardiac enlargement (roentgen ray); the basal metabolism, blood chemistry and P. S. P. kidney function tests were all within normal limits. A mild secondary anemia was found. The one consistent finding throughout our observation was an increase in the amount of sclerosis of the retinal vessels for an individual her age. During our period of observation, at which time sedatives and vasodilators were again tried, her only complaint was of mildly severe headaches and a flushing of the face.

After two months she was sent to the Department of Surgery for an opinion about surgical intervention. It was thought that a sympathectomy would help so she was sent to Touro Infirmary in June, 1937. However, the visiting internist there learned that she had had what he thought was an acute nephritis at the age of eight years, and with the finding of a soft low-pitched systolic mitral murmur, which he considered organic, he assumed the patient had a mitral stenosis and refused to have her operated upon. She was observed for a few days and then discharged.

Some three months later we saw her again, and she stated that the headaches were increasing. We rechecked everything and our findings were approximately those of the first visit. We heard the systolic murmur but considered it functional, as we had in February, 1937. We again considered sending her to the Surgical Clinic but made no consultation appointment until we presented her to the staff tonight.

She has been presented to the staff for an opinion regarding surgery in her case. Would surgery benefit her now in the presence of persistent faint traces of albumin and a moderate fixation of specific gravity, with the diastolic pressure always above 100?

Congenital Megacolon: A Case Report (Dr. H. H. Russell, Department of Medicine): This patient, L. B., colored male, aged 16, was admitted to the clinic on March 21, 1934. His chief complaint was chronic constipation. Present illness began a few days after birth when the grandmother noted that patient's bowels had not moved. She consulted a physician who advised mild laxatives, rectal flushes and suppositories, which were used with very little results. However, grandmother continued to use various laxatives and several enemas daily. This regime was kept up daily for a few weeks when it was decided to omit all treatment for constipation to see what would happen. The patient

went two or three days without any elimination, however nourished well and appeared normal. The grandmother would get busy with laxatives and ten to fifteen enemas daily until bowels moved well. Then patient would be allowed to go several days when some treatment was instituted. Patient seemed to be all right even though he would pass several days without any defecation, and from the time he was about two years of age he would be allowed to go about ten days to two weeks, at which time a repetition of laxatives and enemas would be used. This rhythm of care was used apparently successfully until patient was five years of age. At this time, he had gone about two weeks without defecation when he developed high fever, headache, vomiting, abdominal pains and marked abdominal distention. He was admitted to Charity Hospital and a diagnosis of intestinal obstruction was made, the treatment consisting of high enemas for two or three days. He was discharged in five days apparently all right.

From that time until admission to our clinic, patient would empty his colon at intervals from two to six weeks. After several weeks would pass without a bowel movement, he would have a marked distention of the abdomen, anorexia and malaise at times; when he allowed himself to go four to six weeks without emptying his colon, manual assistance was necessary to remove bowel mass. His grandmother (midwife) stated, "It was just like delivering a big baby." The bowel mass was estimated at three inches in diameter and ten inches in length. After the evacuation, patient would frequently have a syncopal attack for several minutes.

Past and family histories were essentially negative. Physical examination was essentially negative except for carious teeth and abdominal findings.

After defecation, the abdomen would be flat but on palpation the transverse and descending colon could be outlined. Before defecation, the abdomen would be markedly distended and the colon could be outlined on inspection, as well as palpation, being about six times the normal size. Laboratory findings on urine, blood, feces, metabolism and gastric acidity were essentially negative. Barium enema roentgenograms showed transverse and descending colon to be markedly distended, with a report of congenital megacolon.

Patient was advised to take one ounce of mineral oil night and morning and attempt to have a bowel movement daily. After one week, and with no other treatment, patient began to have one or two normal defecations daily. Barium enema roentgenogram has showed a progressive diminution in size of and an increased amount of tone in the colon.

The last roentgenogram, in March, 1937, showed the colon to be about one-third as large as that on first roentgenogram (April, 1934).

When patient was last observed in Clinic, he had gained thirty pounds in weight, looked fine and was having daily or at least every other day defecations with the continued use of mineral oil.

This patient was referred to the Surgical Clinic several times for an opinion concerning surgery of the sympathetics; however, he would not consent to any operation, saying, "My bowels are moving all right."

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held in the Nurses' Lecture Room of Hotel Dieu on Monday, October 18, 1937 at 8:00 p. m.

The meeting was called to order by the president, Dr. H. E. Bernadas, and with the secretary, Dr. J. A. LaNasa, at the desk.

The scientific program consisted of the following papers:

1. A Review of 115 Cases of Intestinal Obstruction from Hotel Dieu Records, 1932-1937 by Dr. A. L. Levin and Dr. M. Shushan. This discussed by Drs. Danna, Fortier, and Salatch.

2. Extra-Cerebral Causes of Epilepsy by Dr. H. R. Unsworth. Discussion was opened by Dr. Fenno.

A recess of one minute was ordered by the chairman after which the meeting resolved into executive session. The meeting was then adjourned.

MERCY HOSPITAL

Monthly meeting of the Mercy Hospital Staff was held on November 3, 1937, Dr. J. J. Irwin presiding.

The scientific program consisted of an interesting talk and lantern slide demonstration by Dr. Charles Bahn on "Ophthalmic Endocrinology". This was well received by the Staff and aroused considerable favorable discussion.

Hospital analysis and mortality investigation were taken up. The chief feature of the latter was a patient with carcinoma of lungs, liver, left ovary and uterus who had only recently become ill and felt as though rest in the hospital plus a thorough check up would improve her poor feeling. She showed a decided tendency to lose ground steadily and despite care given, died in a relatively short time. The case was rather interesting from the standpoint of so many positive findings not affecting the patient's well being and then such a rapid termination without the onset of any symptoms.

H. Ashton Thomas, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

- December 1. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- December 1. Hutchinson Memorial Clinic Staff, 8 p. m.
- December 1. Mercy Hospital Staff, 8 p. m.
- December 6. Board of Directors, Orleans Parish Medical Society 7:30 p. m.
- December 6. Chaille Memorial Oration, 8 p. m. Dr. Walter Timme of New York.
- December 6. Pathologic Conference, Hotel Dieu, 8:15 p. m.
- December 8. Touro Infirmary Staff, 8 p. m.
- December 10. French Hospital Staff, 8 p. m.
- December 11. ELECTION OF OFFICERS, 1938. Balloting between 10:00 a. m. and 12 noon; 2 and 5 p. m.; and 7 and 8:30 p. m.
- December 11. ANNUAL DINNER, ORLEANS PARISH MEDICAL SOCIETY, 7:30 p. m. New Orleans Athletic Club.
- December 15. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- December 15. Charity Hospital Surgical Staff, 8 p. m.
- December 16. Eye, Ear, Nose and Throat Club, 8 p. m.
- December 17. I. C. R. R. Hospital Staff, 12 noon.
- December 20. Hotel Dieu Staff, 8 p. m.
- December 21. Charity Hospital Medical Staff, 8 p. m.
- December 22. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- December 28. Baptist Hospital Staff, 8 p. m.
- December 29. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- December 31. Faculty Club, L. S. U. Medical Center.

TO THE PHYSICIANS OF THE

ORLEANS PARISH MEDICAL SOCIETY

Dear Doctors:

The Southern Medical Association, which is the second largest medical society in America, is an association of which every southern doctor and particularly every member of the Orleans Parish Medical Society, should be a member. It will hold its thirty-first annual meeting in New Orleans, November 30 to December 3 inclusive.

This association is a non-legislative body which devotes its activities to progressive medicine. Its programs are unsurpassed in scientific excellence by any medical organization. This year's program will consist of several clinical sessions and sections devoted to the various specialties of medicine, and scientific and technical exhibits.

Membership in this organization also includes the Southern Medical Journal, one of the outstanding monthly publications. The membership fee is \$4.00 annually.

As chairman of the membership committee, let me urge you, who are not already members, to join our ranks and become part of America's second largest medical society, entirely represented by southern physicians.

Sincerely yours,

Wm. A. Wagner, M. D., Chairman,
Membership Committee.

ANNUAL DINNER

It is planned this year to revive an old custom discontinued because of the depression, that of making the election meeting a social affair in the form of an informal dinner. In keeping with this idea, plans are being made for the annual dinner of the Society to be held Saturday, December 11 at 7:30 p. m. at the New Orleans Athletic Club. As this dinner will serve us as the election meeting the returns of the election will be announced at this time. It is felt that this occasion should constitute an informal get-together and all members of the Society are urged to participate. The cost will be \$1.50 per person, and tickets may be secured at the office of the Secretary of the Society or from the committee member on each hospital staff. This announcement is being made sufficiently far in advance so that everyone will have time to put aside other activities and prevent anything from interfering with his attendance at this dinner. It is hoped to follow the precedent already established at the meetings of this year in the matter of attendance to set a record on this occasion. Let's have the largest number of members ever present at an annual dinner!

During the month of November, the Society held two regular meetings, November 8 and November 22. The following program was presented at the meeting held November 8:

SYMPOSIUM ON SYPHILIS

1. The Genito-Urinary Aspects of Syphilis: Dr. John G. Menville.
2. The Medical Aspects of Syphilis: Dr. Edgar Hull.
3. Cutaneous Syphilis: Dr. James K. Howles.
4. Some Pathological Lesions Initiated by Syphilis: Dr. John R. Schenken.
5. Public Health Aspects of Syphilis: Dr. John A. Trautman (by invitation).

In conjunction with the Tuberculosis Institute sponsored by the Tuberculosis Committee of New Orleans, the Tuberculosis and Public Health As-

sociation of Louisiana, and the Orleans Parish Medical Society, the following program was presented at the meeting held November 22:

Modern Methods of Treatment of Tuberculosis:

Dr. Fred H. Heise, of Saranac Lake, New York.
Notes on the Diagnosis of Tuberculosis:

Dr. John B. Hawes, of Boston.

At this meeting the following delegates and alternates to the Louisiana State Medical Society were elected for a term of two years with the exception of the President who serves only during his term of office:

DELEGATES

Dr. Shirley C. Lyons (President)

Dr. E. L. Leckert	Dr. M. T. Van Studdiford
Dr. H. B. Alsobrook	Dr. Val H. Fuchs
Dr. Emmett Irwin	Dr. Frank Chetta
Dr. James T. Nix	Dr. Jerome E. Landry
Dr. L. C. Chamberlain	

ALTERNATES

Dr. Sidney M. Copland	Dr. N. J. Tessitore
Dr. Theo. F. Kirn	Dr. Edward L. King
Dr. J. F. Sicomo	Dr. H. G. Butker
Dr. E. J. Richard	Dr. Edw. F. Bacon
Dr. J. P. Palermo	Dr. Roy W. Wright

Dr. Gilbert C. Anderson

The following doctors were nominated for Officers for 1938. Election of these officers will be held Saturday, December 11. Balloting shall take place between 10 a. m. and 12 noon; 2 and 5 p. m., and 7 and 8:30 p. m. Only members in good standing are eligible to vote. PLEASE PAY YOUR DUES NOW.

NOMINATIONS

PRESIDENT—Dr. Shirley C. Lyons.

Endorsed by Drs. Roy B. Harrison, Urban Maes, and Leon J. Menville.

FIRST VICE-PRESIDENT—Dr. Edgar Burns.

Endorsed by Drs. L. C. Chamberlain, B. J. DeLaurel, F. L. Fenno, and Shirley C. Lyons.

SECOND VICE-PRES.—Dr. H. Ashton Thomas.

Endorsed by Drs. Val H. Fuchs and R. J. Mailhes.

THIRD VICE-PRESIDENT—Dr. Lucien A. Fortier.

Endorsed by Drs. Val H. Fuchs, J. E. Landry, and E. B. Vickery.

SECRETARY—Dr. Gilbert C. Anderson.

Endorsed by Drs. Manuel Gardberg, R. H. Fisher, Wm. H. Gillentine, Chas. Holbrook, and Emmett Irwin.

TREASURER—Dr. Edwin H. Lawson.

Endorsed by Drs. Waldemar R. Metz and H. V. Sims.

LIBRARIAN—Dr. Donovan C. Browne.

Endorsed by Drs. C. L. Peacock, R. F. Sharp, and J. W. Tedder.

ADDITIONAL MEMBERS BOARD OF DIRECTORS

Dr. Isidore Cohn—Endorsed by Drs. E. E. Allgeyer, Max M. Green, and J. T. Nix.

Dr. George Hauser—Endorsed by Drs. O. W. Bethesda, Aldea Maher, and Waldemar R. Metz.

Dr. James T. Nix—Endorsed by Drs. Emmett Irwin and Marcy J. Lyons.

NEWS ITEMS

Dr. L. L. Cazenavette, Superintendent of the City Hospital for Mental Diseases, attended and participated in the program of the Southern Psychiatric Association, held recently in San Antonio, Texas.

Dr. Alton Ochsner, Professor of Surgery, and Dr. Charles F. Craig, Professor of Tropical Medicine, Tulane University, were guest speakers at the Gulf Coast Clinical Society's annual meeting which was held in Biloxi, Mississippi, November 3 and 4.

Dr. Thomas Parran, Surgeon General, United States Public Health Service, was a visitor to New Orleans, October 29 and 30. While in the City, Dr. Parran visited several hospitals and medical schools as well as conferring with the several organizations in New Orleans dealing with public health and welfare.

The following doctors attended the meeting of the American Academy of Ophthalmology and Otolaryngology held in Chicago, October 11-15: Drs. Charles A. Bahn, C. L. Brown, W. R. Buffington, William B. Clark, Val H. Fuchs, John B. Gooch, J. Raymond Hume, Mercer G. Lynch, Neal Owens, George J. Taquino, William A. Wagner, E. Garland Walls, David Womack, and C. S. Wood.

The ex-internes of the Eye, Ear, Nose and Throat Hospital had a luncheon during the meeting.

Dr. Marcy Lyons attended the meeting of the International Medical Assembly of the Interstate Postgraduate Association of North America in St. Louis, October 18-22.

Dr. John H. Musser addressed the Pulaski County Medical Society on the occasion of the annual banquet tendered by the Society to the President and Past-Presidents of the Arkansas State Medical Society at Little Rock, Arkansas, November 8.

Colonel Charles F. Craig, Director, Department of Tropical Medicine, Tulane Medical School, has been appointed to membership on the Subcommittee of Insects and Diseases of the New York

World's Fair in 1939. Colonel Craig has also recently accepted the invitation to serve as Honorary Chairman of the Section on Tropical Medicine of the Pan American Medical Association.

Dr. T. A. Watters was recently elected to membership in the Central Neuro-Psychiatric Society, which held its convention in Chicago. Dr. Watters also addressed the Louisiana Mental Hygiene Society of Louisiana State University, on "Moods."

Dr. A. F. Hebert has been appointed Chairman of Surgeons at the New Orleans Hospital and Dispensary for Women and Children, to succeed the late Dr. Russell E. Stone.

Dr. Philip Boudreaux has been appointed instructor in anatomy in the Loyola School of Dentistry.

Dr. Curtis H. Tyrone was chosen to represent the School of Medicine of Tulane University, on the executive committee of the Tulane Alumnae Association.

Dr. Lucien A. Ledoux was recently appointed an Associate Professor of Gynecology at Louisiana State University Graduate School of Medicine.

Dr. Howard R. Mahorner and Dr. Warren Hebert attended the Jefferson County Medical Society meeting in Beaumont, Texas, on November 8. Dr. Mahorner addressed the meeting on "Clinical Aspects of Goiter in the Deep South," and Dr. Warren Hebert spoke on, "Does Radium have a Place in the Treatment of Carcinoma of the Rectum."

Dr. John T. Sanders and Dr. Upton Giles attended the Escambia County Medical Society, Inc., Pensacola, Florida, on November 9. Dr. Sanders addressed the meeting on, "Endocervicitis, a Common Focus of Infection: The Use of the Electro-Surgical Unit as a Means of Eradication." Dr. Upton Giles spoke on "Artificial Fever versus Sulfanilamide in the Treatment of Gonorrheal Arthritis."

The following doctors were elected to membership:

Active: Drs. John H. Connell, Eugene H. Countiss, Dean H. Echols, Bela Halpert, Anthony J. Italiano, Barrett Kennedy, Samuel A. Romano, John R. Schenken, Carroll Smithers, Marx D. Sterbcow, and Edwin W. Tucker.

Associate: Dr. Joseph D. Landry.

Interne: Drs. Rafael T. Armstrong, Edward M. Aronovich, DeWitt Claunch, John H. Dellinger, Attilio V. Filizola, Daniel L. Forte, Samuel H. Haigler, Alfred Y. Hew, Roger S. Knapp, Ildefonso

R. Lugo, Wilbur E. Meneray, James L. Pickens, Ernest H. Planck, Jr., David V. Rodgers, Alfredo G. Silva, John J. Stone, and James B. Stubbs.

A meeting of the Faculty Club of Louisiana State University Medical Center took place on Friday, November 26, 1937, 4th floor, L. S. U. Building. The following papers were presented:

1. Liver Function After Gum Acacia Administration: Dr. W. K. Hall. Discussion opened by Dr. W. M. McCord.

2. Modern Treatment of Syphilis: Dr. James W. Tedder. Discussion opened by Dr. Robert Sharp.

3. Parasitic Infection of the Appendix: Dr. Rigney D'Aunoy, Dr. J. R. Schenken, Dr. Emma S. Moss. Discussion opened by Dr. J. C. Swartzwelder.

TREASURER'S REPORT

Actual Book Balance 9/30/37	\$2,891.02
October Credits	254.89
Total Credits	3,145.91
October Expenditures	542.81
Actual Book Balance 10/28/37	\$2,603.10

LIBRARIAN'S REPORT

During October, 71 volumes were added to the Library. Of these 44 were received by gift, 1 by purchase and 26 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is given below.

The Library has loaned to doctors during September, 935 books and journals, or almost two to each member of the Society. An additional 914 have been loaned to students for overnight use, making a total of 1894 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

Members of the staff have collected material on the following subjects during October:

Value of a medical library.
Heredity in epilepsy.
Apnea.
History of cesarean section.
Anesthetic death.
Roentgenography in bone tumors.
Insulin in schizophrenia.
Syphilis and pregnancy.
Role of vitamins in sterility.
Charles Scott Sherrington.
Sacral anesthesia.

NEW BOOKS

A. M. A. Council on Pharmacy and Chemistry: Annual Report, 1936.

Southern Surgical Association Transactions, 1936.

Rockefeller Foundation International Health Division: Report, 1936.
 Rockefeller Foundation Annual Report, 1936.
 American Urological Association—Southeastern Branch—Transactions, 1936.
 American Urological Association—North Central Branch—Transactions, 1936.
 Dryerre, Henry: Aids to Physiology, 1937.
 Sutton, D. C.: Physical Diagnosis, 1937.
 Miller, S. C. (ed.): Oral Diagnosis and Treatment Planning, 1936.
 Hiscock, I. V. (ed.): Community Health Organizations, 1932.
 Mills, H. A.: Sickness and Insurance, 1937.
 Savill, T. D.: System of Clinical Medicine, 1936.
 Roesler, Hugo: Clinical Roentgenology of the Cardiovascular System, 1937.
 Pittsburgh Diagnostic Clinic: Clinical Reviews, 1937.
 Donaldson, S. D.: Roentgenologist in Court, 1937.
 Krumbhaar, E. B.: Pathology, 1937.
 Snow, John: Cholera, 1936.
 MacKinney, L. C.: Early Medieval Medicine, 1937.
 Gray, Sir H. M. W.: Colon as a Health Regulator, 1936.
 Thacher, Thomas: Brief Rule to Guide the Common People of New England, 1937.

Morgan, John: Discourse upon the Institution of Medical Schools, 1937.
 Welch, W. H.: Adaptation in Pathological Processes, 1937.
 Thesing, Curt: Genealogy of Sex, 1934.
 Weiss, Edward: Practical Talks on Kidney Diseases, 1937.
 Davidoff, L. M.: Normal Encephalogram, 1937.
 Ischlonsky, N. E.: Protoformotherapy in Treatment and Prevention, 1937.
 Clark, LeMon: Emotional Adjustment in Marriage, 1937.
 Harvard School of Public Health: Environment and Its Effect upon Man, 1937.
 Maher, C. C.: Electrocardiography, 1937.
 Hertzler, A. E.: Technic of Local Anesthesia, 1937.
 Crossen, H. S.: Synopsis of Gynecology, 1937.
 May, C. H.: Manual of Diseases of the Eye, 1937.
 Brennemann, Joseph, (ed.): Index to Practice of Pediatrics, 1937.
 A. M. A. Council on Pharmacy and Chemistry: New and Non-Official Remedies, 1937.
 Osaka Imperial University: Collected Papers, 1936.
 Congress Internationale de l'insuffisance hepatique: Resumés des rapports, 1937.
 Gilbert C. Anderson, M. D.,
 Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

A LETTER FROM THE PRESIDENT

To the members of the Louisiana State Medical Society:

The Southern Medical Association will hold its annual meeting in New Orleans, November 30-December 3, at which time the Orleans Parish Medical Society will be the hosts. It is an honor to have this great organization hold its meeting in our state, and in order to show our appreciation, I urge as many of you as possibly can to register at this meeting.

Your attention is also called to the fact that the New Orleans Graduate Assembly will hold its second annual meeting on March 7, 8, 9 and 10, 1938. The first Assembly, I am advised, was an unqualified success.

There is no good reason why the doctors of Louisiana should be forced to leave the state for graduate work. It is my studied opinion that the profession of New Orleans can and will provide as good a program as can be obtained anywhere. In order to put this Assembly on a firm and permanent basis, it will be necessary for the members of the State Society to lend their assistance and show their interest by attending the future meetings of the Assembly. I urge you, therefore, to bear these

dates in mind and make your arrangements to attend.

C. M. Horton, M. D., President.

LECTURE COURSES IN PEDIATRICS

Lecture Courses in Pediatrics, sponsored by the Committee on Medical Education and the State Board of Health, have been organized and will be conducted within all Councilor Districts, exclusive of First and Second Districts.

The plan is to conduct three courses in each of the stipulated Councilor Districts, each course to consist of a daily lecture for five consecutive days. The content of the course has been worked out by a committee made up of Dr. Robt. A. Strong, Dr. Chas. J. Bloom and Dr. John Signorelli.

The program will be launched in the Seventh District; and Lake Charles, Opelousas and Crowley have been selected as centers. The program is as follows:

Lake Charles, December 6-10: Dr. Robt. A. Strong.

Opelousas, December 13-17: Dr. Roy E. de la Houssaye.

Crowley, January 10-14: Dr. Jack Strange.

The Committee on Arrangements for the Seventh

Councilor District is made up of Dr. Claude A. Martin, Dr. J. W. Faulk, Dr. L. J. Bienvenu and Dr. J. A. Crawford. All physicians in Seventh District and vicinity are cordially invited and urged to attend.

Announcement of subsequent courses will appear as arrangements are completed.

SHREVEPORT AND FOURTH DISTRICT MEDICAL SOCIETIES

The joint meeting of the Shreveport Medical Society and the Fourth District Medical Society was held in Shreveport on October 5. Dr. S. A. Tatum, president of the district society, presided.

Dr. C. M. Horton, President of the Louisiana State Medical Society, was presented to the group.

The following officers were elected by the district society for the ensuing year:

President: Dr. J. A. Hendrick, Shreveport.

Vice-President: Dr. H. B. Wren, Shreveport.

Secretary: Dr. P. D. Abramson, Shreveport.

Delegate: Dr. S. A. Tatum, Homer.

Dr. Ralph Bowen, guest speaker from Oklahoma City, presented a lantern slide illustrated discussion on allergy in reference to the respiratory, cutaneous and gastrointestinal systems. Dr. Bowen's paper was discussed by Drs. Browning, Lucas, Webb, Gorton and Duncan.

Dr. Paul Winder gave a presentation of the subject "Special Ovarian Tumor". Dr. Winder's paper was discussed by Drs. Mathews and Mays.

Following the scientific program Dr. Sanders announced that the meeting of the Tri-State Medical Society was to be held in Shreveport.

Dr. Barrow offered the following resolution based on Dr. Horton's suggestion: "That the Fourth District Medical Society unanimously endorse the suggestion made by the President of the State Society, Dr. Horton, that a full time secretary should be employed by the State Medical Society to look after its financial interests, and that the matter should be respectfully referred to the State Society for its consideration." The motion was seconded by Dr. Rutledge and carried.

C. Raymond Mays, M. D., Sec.

SIXTH DISTRICT MEDICAL SOCIETY

The Sixth District Medical Society met at the East Louisiana State Hospital, Jackson, on November 18, at 7:30 p. m. The following scientific program was presented:

Serum Treatment of Disease: By Dr. Charles Eshleman.

Clinical Significance of Masses in the Scrotum: By Dr. John G. Menville.

Dementia Praecox and the Necessity of Early Diagnosis: By Dr. E. M. Robards.

J. L. Beven, M. D., Sec.

EIGHTH DISTRICT MEDICAL SOCIETY

At a meeting of the Eighth District Medical Society on October 6, 1937, the following officers were elected for the year 1938:

President: Dr. A. B. Cairns, Bunkie.

First Vice-President: Dr. J. A. White, Jr., Alexandria.

Second Vice-President: Dr. D. V. Donaldson, Dry Prong.

Secretary-Treasurer: Dr. Isadore Brickman, Alexandria.

Delegate: Dr. J. T. Cappel, Alexandria.

Alternate Delegate: Dr. L. D. Gremillion, Alexandria.

TRI-PARISH MEDICAL SOCIETY

The Tri-Parish Medical Society met on November 2 at the Fischer Hotel at Lake Providence. The members present were Drs. J. P. Davis, president, G. S. Hopkins, W. K. Evans, B. C. Abernathy and William H. Hamley, secretary-treasurer, from East Carroll; Drs. D. W. Kelley, B. L. Bailey, E. D. Butler, W. McG. Dollerhide and Fritz A. LaCour from West Carroll; Drs. G. W. Gaines, E. O. Edgerton and H. S. Provine from Madison; Drs. T. G. Johnson, D. F. Davis and T. G. Ward from Tensas. Drs. W. H. Parsons, Pierre Robert and J. L. Hall from Vicksburg, Miss., were guests of the society. Dinner guests were Mrs. J. P. Davis, Mrs. G. S. Hopkins, W. K. Evans, members of the auxiliary, and Miss Dorothy Kennedy, secretary to East Carroll Health Unit, and Mrs. Clyde Leaurant, R. N., local Unit Nurse. Drs. C. E. Rice, Surgeon USPHS, Consultant to the Social Security Board, was also present, having been sent from Washington to investigate reported trachoma in East Carroll Parish.

A paper, "The Early Diagnosis of Cutaneous Carcinoma", was read by Dr. J. L. Hall of Vicksburg.

"Some Remarks Concerning a Recent Visit to the Surgical Clinics of Great Britain and the continent" was presented by Dr. W. H. Parsons of Vicksburg.

Dr. C. E. Rice spoke on "Diagnosis of Trachoma."

The meeting adjourned to meet at Tallulah on December seventh.

William H. Hamley, M. D., Sec.

CHRISTMAS SEAL SALE

The opening of the 31st annual Christmas Seal Sale sponsored by the National Tuberculosis Association and its two thousand affiliated groups for the purpose of financing the organized campaign against tuberculosis, carries with it a warning from Surgeon General Thomas Parran.

"Tuberculosis constitutes both a challenge and a

threat Perhaps we have been too smug,—too confident that this killer was in a fair way to be exterminated quickly and without too great an effort on our part. Now we are brought face to face with the fact that the decline in tuberculosis mortality has, for the time being at least, been checked," Dr. Parran was recently quoted as saying in a statement issued by Dr. W. H. Seemann, President of the Tuberculosis and Public Health Association of Louisiana, which opened the Seal Sale in this state November 26.

"This disturbing news," the statement continues, "has become available in preliminary figures for the year 1936.

"The cessation of the decline in tuberculosis mortality is noteworthy. If later statistics confirm the indicated break in this disease, 1936 will be the first year since the World War with the exception of 1926, that the mortality rate from tuberculosis in the United States has failed to decline. Preliminary reports from 34 states for the first quarter of 1937 show a slight increase in the mortality from this disease, indicating that the check in the decline of the death rate, which was first noticed in 1936, has continued."

Dr. Parran cites the unskilled industrial employees and young girls between the ages of fifteen and twenty-five as those needing immediate attention in the nationwide battles against tuberculosis and adds that negroes and other racial groups as well as boys and girls, particularly of high school age, should also be the center of preventive efforts.

"One of the outstanding means of preventing and curing tuberculosis," Dr. Parran went on, "is the income received from the Christmas Seals, the sale of which is now under way in all parts of the United States."

In New Orleans these seals are being sold by the Tuberculosis Committee of New Orleans.

"Despite the temporary check to our repressive measures," Dr. Parran states, "I reiterate—Tuberculosis can be wiped out in our nation."

TULANE AT THE MAYO CLINIC

The following is a list of Tulane University graduates who are Fellows at the Mayo Clinic: B. F. Smith, Class of 1919; M. W. Matthews, Class of 1927; T. J. Fatherree and C. E. Ward, Class of 1932; S. J. Campbell, Class of 1933; S. B. Lovelady, J. C. Holman, A. K. Doss and F. M. Thigpen, Class of 1934; J. A. Hendrick, I. C. Skinner, T. L. L. Soniat and S. H. Colvin, Jr., Class of 1935; T. B. Tooke, Jr., Class of 1936.

NEWS ITEMS

Dr. Henry W. E. Walther, Professor of Urology,

Louisiana State University, recently addressed the Southeastern Branch Society of the American Urological Association at the annual meeting held in Birmingham, November 5 and 6.

At the invitation of the American Academy of Ophthalmology, Dr. Charles A. Bahn, Director of the Department of Ophthalmology of the Louisiana State University Medical Center, gave a course of instruction at the Academy's meeting in Chicago, on October 12 and 13. The subject of the course was Ophthalmic Endocrinology.

Dr. Isidore Cohn, Professor of Surgery and Associate Director of the Department, Graduate School of Medicine, Louisiana State University Medical Center, was invited to give a fellowship address at the homecoming of the Scott and White Clinic, Temple, Texas, on November 12 and 13. The subjects which Dr. Cohn presented at this time were "Sudden Deaths" and "The Surgical Clinic."

Dr. Cohn will also present a paper on "Carcinoma of the Breast in the Negro" at a meeting of the Southern Surgical Association in Birmingham, during the month of December.

During the meeting of the Southern Medical Association in New Orleans, Dr. Cohn will be one of the speakers during the pre-convention clinic on New Orleans' Day. The subject of his address will be "Surgical Aspects of Splenomegaly."

Dr. James T. Nix, Dean of the Graduate School of Medicine, Louisiana State University Medical Center, attended the Clinical Congress of the American College of Surgeons at Chicago, October 25-29. At the invitation of the Congress, Dr. Nix presented a paper on the "Proper Attitude of the Medical Staff" before the Annual Hospital Standardization Conference. He also made two radio addresses during the Congress. The first was on "The Educated Physician" and was given over WJJD and the National Network. The second was entitled "Doctors, Dentists, and Diseases" and was given over station WGN.

Assistant Surgeon John R. Heller, Jr., was relieved from duty at Harrisburg, Pa., on or about Dec. 1, 1937, and ordered to proceed to New Orleans, La., in connection with venereal disease control activities.

Assistant Surgeon John W. Jolley was relieved from duty at the U. S. Quarantine Station, New Orleans, (Algiers) La., upon arrival of Assistant Surgeon R. D. Mansfield, and ordered to proceed to the U. S. Quarantine Station, Charleston, S. C., and assume charge of the Quarantine Station at that place.

Assistant Surgeon Robert D. Mansfield was relieved from duty at the U. S. Marine Hospital, Memphis, Tenn., upon arrival of Assistant Surgeon Fred J. Black, and ordered to proceed to the U. S. Quarantine Station, New Orleans (Algiers) La., and report to the Medical Officer in charge of the Quarantine Station at that place for duty.

Senior Medical Interne John W. Bunting was relieved from duty at the U. S. Marine Hospital, New Orleans, La., and ordered to proceed to Detroit, Mich., and report to the Medical Officer in charge of the Marine Hospital for assignment to duty.

Assistant Surgeon Paul T. Erickson was relieved from duty at the U. S. Quarantine Station, Miami, Fla., on or about November 11, 1937, and ordered to proceed to the U. S. Quarantine Station, New Orleans (Algiers), La., and report to the Medical Officer in charge for duty.

THE AMERICAN MEDICAL GOLFING ASSOCIATION

As in previous years, the American Medical Golfing Association is bringing a special train to the meeting of the American Medical Association in San Francisco. The first stop will be New Orleans on Tuesday, June 7, and five stops will be made en route to San Francisco, arriving there June 13. Golfing physicians interested in this trip may get all the details from Dr. Walt P. Conaway, 1723 Pacific Avenue, Atlantic City, N. J., the President of the American Medical Golfing Association.

EXAMINATIONS: AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next examination (written and review of case histories) for Group B candidates will be held in various cities of the United States and Canada, on Saturday, February 5, 1938. Application for admission to this examination must be on an official application form and filed in the office of the Secretary at least sixty days prior to this date.

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13, and 14, 1938, immediately prior to the meeting of the American Medical Association.

Application for admission to the June 1938 Group A examinations must be on file in the Secretary's Office before April 1, 1938.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state which contain the following summarized information: For the week ending October 23, the forty-second week of the year, there were reported in double figures 79 cases of syphilis, 49 of pulmonary tuberculosis, 34 of malaria, 30 of pneumonia, 27 of cancer, 14 of gonorrhea, and 13 each of septic sore throat and typhoid fever. There were five cases of poliomyelitis reported this week: two from Orleans Parish, the other three respectively from Allen, St. James and Tensas. Two cases of typhus fever were reported from East Baton Rouge Parish. The next week, ending October 30, there were reported 46 cases of gonorrhea, 38 of pulmonary tuberculosis, 31 of cancer, 28 of syphilis, 24 of pneumonia, 23 of diphtheria, 18 of scarlet fever, 14 of malaria, 12 of typhoid fever and 10 of influenza. Three cases of poliomyelitis were listed this week: one from Livingston and two from DeSoto Parish. The majority of scarlet fever cases were reported from New Orleans, 10 in number. For the week ending November 6, syphilis showed tremendous increase with 118 cases listed; this was followed by 35 of pneumonia, 29 of malaria, 28 of pulmonary tuberculosis, 27 of diphtheria, 24 of cancer, 12 of gonorrhea and 10 of whooping cough. Four cases of poliomyelitis were reported this week, one each from Acadia, Ascension, Concordia and Orleans.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending October 16, there were 131 deaths reported in the City of New Orleans, exactly the same number as listed the previous week and divided 85 white and 46 negro. Nine of these deaths were in children under one year of age. The week ending October 23 showed a very peculiar coincidence: For the third successive week there were exactly 131 deaths, but the division between the races was slightly different, being 78 white and 53 negro. The infant mortality rate was high, there being 18 children dying under one year of age. For the week ending October 30, there were 140 deaths, divided 72 white and 68 negro; this week the infant deaths were 10 in number. The death rate seems to be remarkably stable for the present time, because for the week ending November 6, there were again 140 deaths in the city. At the time, however, there was quite a considerable increase in the number of deaths in the white population, there being 94 as contrasted with 46 in the negro. Deaths among infants under one year of age were nine in number.

WOMAN'S AUXILIARY
Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

Our auxiliary members are enjoying the letters from the presidents of the parish medical societies. This month we have one from Dr. J. Preston Davis, President of Tri-Parish Medical Society.

LETTER FROM DR. DAVIS

There was organized a Woman's Auxiliary of the Tri-Parish Medical Society last spring. We were glad to have them organize. It got more of us off to the state meeting and causes our own meetings to have better attendance. You know women just love to be going places and doing things. So they get the doctors off so they can go along. My wife got me off to the state meeting last summer and I had always claimed I did not have time to attend heretofore; but now I have resolved never to miss a state meeting if I can in any way make it and, of course, the wife will go along, too. They seemed to have had such a grand time in Monroe. Yes, we will be in New Orleans at the next state meeting.

Sincerely,

J. Preston Davis, M. D., President,
Tri-Parish Medical Society.

JEFFERSON DAVIS PARISH

The October and November meetings of the Woman's Auxiliary to the Jefferson Davis Parish Medical Society were held in Jennings.

Five dollars was contributed to the Indigent Physicians' Fund.

A renewal subscription of one year was given to the Jennings and Welsh High School libraries.

Interesting programs preceded the social hour.

Mrs. Claude A. Martin,
Publicity Chairman.

OUACHITA PARISH

The Woman's Auxiliary to the Ouachita Medical Society held its monthly luncheon and meeting at the Lotus Club. We find that for our October and November meetings our attendance was much better than in 1936, and the members appear most enthusiastic over the year's program of work.

Thus far, we have made our contribution of ten dollars to the Indigent Physicians' Fund; have obtained fifteen subscriptions to Hygeia; assisted in the financial drive for the Y. W. C. A.; offered our service and plan to do our part with the Red Cross Drive and sale of tuberculosis seals.

Our November meeting was specially planned to have as our guests the state officers and officers of Caddo, Claiborne, and Tri-Parish auxiliaries, but due to the inclement weather they were unable to attend.

Dr. Douglass Williams, Director of the Ouachita Parish Health Unit, who has cooperated with the Auxiliary in making possible free health examinations, gave a most interesting lecture on "Social Diseases."

Walter Winchell has nothing on us when it comes to announcing weddings and the arrivals of "blessed events", for we have three to announce; Charlotte Ashley, daughter of Dr. and Mrs. Scott Hamilton, and Jay and Joe, twin sons of Dr. and Mrs. J. W. Cummings. Mrs. Cummings was formerly Joe Mary McKoin, daughter of Dr. and Mrs. B. M. McKoin.

Dr. and Mrs. A. B. Gregory and Dr. and Mrs. C. H. Hill announce the marriages of their daughters: Jane Gregory to Mr Robert Kellogg; Evelyn Hill to Mr. Harry Moore, both taking place in October.

Both Mrs. J. B. Vaughan and Mrs. R. W. O'Donnell who have been ill were able to be present at our last meeting.

Since our meeting date has been changed from the third to the second Wednesday of each month, we will be able to contribute a bit of news from our auxiliary each month.

Mrs. DeWitt T. Milam,
Publicity Chairman.

ORLEANS PARISH

The November meeting of the Woman's Auxiliary of the Orleans Parish Medical Society was one of the largest in attendance in many years, having about 150 present.

The highlights of the meeting were a report from Mrs. George Taquino, Chairman of Entertainment for the Southern Medical Society Convention, and a report from Mrs. Theodore Simon on the enrollment for the classes in parliamentary procedure and public speaking which will be given complimentary to members of the auxiliary. Over 100 have enrolled to date.

Miss Jessie Tharp, well known New Orleans artist, gave a masterful reading of the current play "Victoria Regina."

The usual tea and social meeting followed.

Mrs. S. M. Blackshear,
Publicity Chairman.

TERREBONNE PARISH

Terrebonne Parish reports that this auxiliary is so new they have nothing to give in the way of news, but hope to let us hear from them soon. Mrs. J. B. Duval is their publicity chairman.

We are looking forward to seeing a number of our auxiliary members in New Orleans for the Southern Medical Meeting. Mrs. George Taquino,

Chairman of Entertainment, is making great plans for the ladies' entertainment and we are sure you will enjoy your visit.

Don't forget the A. M. A. broadcast. We had the pleasure of hearing Dr. Morris Fishbein speak over the radio while in New Orleans and we are sure, if that is a sample of the broadcast, you won't want ever to miss one of them.

Mrs. Lucian W. Alexander, Chairman,
Press and Publicity.

With happy Yuletide days drawing near

Your President hopes they'll be full of cheer,

For you and those whom you hold so dear.

A MERRY CHRISTMAS!—HAPPY NEW YEAR!

BOOK REVIEWS

Protoformotherapy in Treatment and Prevention:

By N. E. Ischlondsky. London, Henry Kimpton, 1937. pp. 237. Price 21s.

By definition, protoformotherapy is the treatment by stimulation of the natural protective capacities of the organism. The introduction into the body of specific symptomatic medicaments is harmful because they inhibit the organism's reactions and resistance. Protoformotherapy prevents disease by correcting the deficient constitution of the organism by stimulation of the organism's own endocrine mechanisms.

The present work is an extended edition of three lectures delivered before the Egyptian Medical Association at the University of Cairo, in March, 1936, and first published in the Journal of the Egyptian Medical Association, June, 1936.

The first experimental work was devoted to the search for, and isolation of, the naturally occurring activating substances, in order to stimulate the endocrine glands by introducing them into the blood. By the end of 1924, the author had succeeded in isolating the substances from the embryonic tissues by extraction. A summary of the method is given. These stimulative substances, after their isolation were then combined with the "genital pro-hormone" in vitro, and the action of the product studied in a series of experiments. As a result, it was found that there is an increase of the general resistance of the treated animals and of their diverse natural protective capacities. These manifest themselves "in the struggle of the senile organism against deficiency provoked by age just as clearly as in the struggle of the sick organism against infection or other biological disturbances". A general conclusion is drawn that "between the so-called normal, that is to say physiological, symptoms characterizing old age, on

one side, and the symptoms called pathological, that is to say morbid, on the other there is no difference of principle as to the physico-chemical mechanism of their development or the character and mechanism of development of the incretory effect on those symptoms".

The second lecture is devoted to the internal secretion of the embryonic tissues and its clinical application; while the third discusses the internal secretion of the embryonic tissue, the problem of senility and biological regeneration. The claim is made that, in the course of the clinical observations, "there was not a single symptom supposed to be characteristic of old age which was not encountered in homologous conditions in young invalids". Further, "that the experimental attempts to influence old age are from the scientific point of view as justified as the treatment of morbid processes". The fact that exceptional longevity exists in nature, rare though it be, clearly proves that it must be considered as a completely natural manifestation, and that the attempts to attain that longevity do not signify any action contrary to the laws of nature, but are well justified by those very laws". From a biological point of view the experimental regeneration of the senile organism resolves itself into influencing the development, and especially the direction, of the vital processes in the way favorable to the organism, and into preventing, or at any rate retarding, the transition of the reversible chemical reactions into unlimited irreversible processes. While the attempts of Steinach and of Voronoff to offset senility are commended, they are criticized, because as with all other attempts, they blindly follow the old conception of Brown-Séquard according to which the re-establishment of the endocrine activity of the genital glands is the fundamental fac-

tor insuring the practical solution of regeneration. The author believes that if life could be kept continually developing then there would be no old age and this he believes he has demonstrated by the use of his extract.

The final section is devoted to protoformotherapy and the struggle against cancer, which is intimately connected with the ageing process. This he thinks can be successfully accomplished by the use of a protoformative extract of ineret. Naturally, the question of the necessary amount to be used arises but, as the author says, this being of a purely technical nature, the difficulties which it may present can easily be overcome by the institutions interested in the investigation of the cancer problem.

There are 66 pages of appendices and 68 figures on plates in which clinical histories are summarized to illustrate the alleged benefit of the incretory treatment.

A careful reading of the text and an analysis of the histories do not bring conviction.

HENRY LAURENS, Ph. D.

Dr. Colwell's Daily Log for Physicians: Published by Colwell Publishing Company, Champaign, Ill, 1937.

The Physician's Daily Log is an excellent record book, of some 400 pages, for the practicing physician. It contains space for almost every conceivable financial contingency. Starting with the first day in the year there is a large sized page for the recording of each day's calls. At the end of the month there are several pages for the monthly receipts and disbursements. At the end of the book there is space for social security tax; obstetrical record with waiting list of patients; space for patients who have notifiable diseases, together with a column for when the notice was sent; and completed with a page for the annual monetary summary. Altogether the volume makes, as the foreword says, "A brief, simple, accurate financial record for the physician's desk."

J. H. MUSSER, M. D.

Clinical Parasitology: By Charles F. Craig, M. D., F. A. S. C., F. A. C. P., and Ernest C. Faust, M. A., Ph. D. Philadelphia, Lea & Febiger, 1937. pp. 733. Price \$8.50.

The introduction to this book gives and presents an excellent summary of the facts which are elaborated upon in the subsequent chapters of the work that Craig and Faust have just brought out. The student of animal parasitic infections thus has a clear understanding of what is to be presented later on. There is also placed before Section II and Section III concise statement explaining in general terms the general considerations having

to do with the subject matter of these two sections.

The book is divided into three sections: The first having to do with protozoa and protozoan infections, the second with the helminths and helminthic infections, and the last with arthropods and human disease. Each section is subdivided into chapters and each chapter deals with the important animal organisms which produce disease in man. Selecting at random a specimen chapter, in this instance chapter II, on the pathogenic ameba, first will be found the classification of the organism. Then follows a detailed biologic description of *Endameba histolytica*. The etiology is next fully considered and then some pages are devoted to the morphology of this endameba, whose habitat, life cycle, cultivation, epidemiology, methods of transmission are all fully presented. Succeeding this are divisions devoted to pathology and to symptomatology, to diagnosis, prognosis and treatment, as well as the prevention of *E. histolytica* infection. It may be seen from this outline of the arrangement of the material that there is a very complete series of statements covering fully every important fact or factor that has to do with disease caused by *Endameba histolytica*. Comparable chapters are presented in the other types of infection described in the first two sections. In the third section crustacea, insects and spiders are described, and discussed from the point of view of their ability to, and likelihood of, conveying disease, and what can be done to get rid of these annoying jointed-leg pests. This is really a very splendid section and is something quite unusual in medical literature. It is of extreme importance to the practicing physician to know about "bugs" and how they transmit disease. Likewise it is important to know how to control them. Following this there is a section on laboratory technic and aids for the collection and identification of parasitic protozoa, helminths and arthropods of medical importance. The book is completed by a splendid bibliography of important papers on the subject, as well as a list of authors who have contributed to the knowledge of these particular organisms. The index seems most complete.

This work has a distinct clinical implication, but it must not be forgotten that in order accurately and fully to understand clinical expressions of various animal parasitic diseases it is necessary to know something of the biology of the organisms. By combining the talents of two outstanding men it has been possible to present a work in which one man, in his special field thoroughly well qualified to discuss biologic aspects of animal parasitic disease, presents his aspects of the subject, while the other, equally skilled in his branch, gives the facts that would be primarily of interest to a clinician.

Especially to be commended are the two chapters on malaria. Here is a disease which is apparently more prevalent the past few years than for many years. All practicing physicians should know all angles of a disease which is as common as malaria. It is interesting to note that Craig apparently favors atabrine, followed by plasmochin in the treatment of the disease. It is also worthy of being noted that he considers chiniofon "the drug of choice" in the treatment of amebiasis.

It is believed that the book will be warmly received. It supplies a definite need and especially to the practitioners of the South who are constantly seeing patients who suffer from protozoal and helminthic infections.

J. H. MUSSER, M. D.

Physical Diagnosis: By Don C. Sutton, M. S., M. D. St. Louis, C. V. Mosby Co., 1937. pp. 495. Price, \$5.00.

Again we have another book on physical diagnosis, and again we find those elements that make it as good and as bad as its predecessors. One gains the feeling that there is one more to join the innumerable caravan and that the truly great book on physical diagnosis still remains to be written. It is in the conventional manner. The information is reliable; the style is readable and the illustrations discernible. The sagittal and cross sections occupy a prominent part of the book. There are 13 cross sections showing the relations in the chest of the lungs, heart and mediastinal tissues. These may prove, the author feels, of great importance to the student in the interpretation of the findings upon physical examination. The roentgen ray pictures are satisfactory and numerous pictures add to the value of any book on physical diagnosis. The section on neurologic examinations is poor, as it is too brief. The historical introduction is good and the chapter on history-taking fairly good. All in all, it can be said of the book that it may be recommended to the student as well as almost any other book on the subject.

I. L. ROBBINS, M. D.

Personal Hygiene: By C. E. Turner, M. A., Dr. P. H. St. Louis, C. V. Mosby, 1937. pp. 335. 84 illus. Price \$2.25.

Student health education and training have long been the interest of the author, as evidenced by his long career in this field and his previous work, "Personal and Community Health," Part I of which constitutes the basis for the present publication.

In the volume under review Dr. Turner gives a clear and readily understandable description of the physiologic mechanisms of the body but ap-

pears to have underrated the ability of university students to understand technical terms. The value of the book could have been enhanced by writing it on a higher intellectual level.

Similarly, the hygienic efforts to be applied do not always follow the physiologic principles on which they are based. For example, on page 221 in speaking of the effects of poor posture the statement is made, "The lungs are less completely expanded; some portions of them become less active and more readily susceptible to the development of tuberculosis infection"; on page 123, in a discussion of acute nephritis is found the assertion, "In the adult it may result from undue strain or exposure." These are old inferences that have not been substantiated in fact.

On the whole, the work is an excellent treatise on the fundamentals of physiology, is generally sound in its hygienic advice, but is subject to occasional overstatements in the relationships between cause and effect which unfortunately is the main approach of the author in his intelligent appeal to the students.

W. H. PERKINS, M. D.

A Discourse Upon the Institution of Medical Schools in America: By John Morgan. Baltimore, The Johns Hopkins Press, 1937. pp. 62. Price \$2.00.

When John Morgan delivered his memorable address before the College of Philadelphia in 1765, medical education on this continent was still represented by efforts of practitioners teaching the healing art to their apprentices. Morgan's intention was to bring to the American Colonies some of the methods he had found in practise in Europe from which he had recently returned.

His "Discourse" is an excellent exposition of his ideas on the subject. He clearly explained the need for specialization among practitioners and endeavored to separate the work of the physician from that of the surgeon on one hand and that of the apothecary on the other. The necessity for affording students a place to obtain a training in the fundamentals of anatomy, materia medica, botany, chemistry and the theory of medicine he stressed; and he urged the incorporation of medical colleges among the existing institutions of higher learning that standards of education might be maintained.

It is worthy of note that with the establishment of the first medical school in America, Morgan formulated principles of education which would today still be accepted as sound.

This little book is heartily recommended to all interested in tracing the development of American medicine.

SYDNEY JACOBS, M. D.

The Environment and its Effect upon Man: Symposium held at Harvard School of Public Health. Boston, Harvard School of Public Health, 1937. pp. 297.

The influence of the environment upon man with its weal and its woe has been the subject of thinkers from earliest times, but only recently has such observation been placed upon a sound scientific foundation. The result has been a body of data that have yielded tremendous assets in the amount of good that has redounded to the benefit of man.

In this symposium have been gathered authorities who have attacked this problem in its manifold aspects. Air-borne infections, CO₂ poisoning, air conditioning, toxic dusts and fumes; industrial fatigue and the effects of social environments are but a few subjects merely cited to call attention to the many revolutionary changes occurring in the industrial, social and economic life of the nations. It is a work with which the physician should be familiar. It reveals the great necessity of cooperation between the engineer and the physician so essential to the conquest of man's grim fight against a one time considered invincible and inexorable enemy, in the battle against disease. Great success has been achieved; much yet remains to be accomplished.

I. L. ROBBINS, M. D.

Oral Diagnosis and Treatment Planning: By Samuel Charles Miller, D. D. S., and 22 contributors. Philadelphia, P. Blakiston's Son and Co., 1936. pp. 540, illus. Price \$7.50.

Such a book written by a highly able author and a host of distinguished contributors is a great contribution to a neglected phase of dentistry. This volume is well illustrated and covers every phase of dentistry from pain, caries and periodontia to the restoration of lost teeth. Among the contributors are found only outstanding men in their field, some with the degree of D. D. S., some M. D. and some Ph. D.

This work is a text for dentists and dental students, as it offers very little of interest to the physician.

F. HAROLD WIRTH, D. D. S.

Clinical Reviews of the Pittsburgh Diagnostic Clinic: Edited by H. M. Margolis, B. S., M. D., F. A. C. P. New York, Paul B. Hoeber, Inc., 1937. pp. 552. Price \$5.50.

Various and sundry subjects that make up the diagnostic problems of the every day practice of medicine as seen in the clinic are dealt with in this volume. To list the many subjects in this 552 page book is impossible. The diagnosis and treatment of obesity, heart disease, thyroid dysfunction, psychoneurosis are but a few of the conditions concerning which essays have been writ-

ten and in major part by the editor. At the conclusion of the essays are very good bibliographic references. There are no illustrations but there is a good index.

The articles are well written and incorporate the most recent concepts held in present day medicine. Many of the articles contain case reports. Practitioners of medicine will find much in such a volume to be of interest, and the beautiful print and fine paper add to the benefit and pleasure of reading this book.

I. L. ROBBINS, M. D.

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THE PRESENT STATUS OF THE HEALTH EXAMINATION*

WILLIAM HARVEY PERKINS, M. D.†
NEW ORLEANS

In 1861, Horace Dobell, writing in England said, "I wish to propose that there should be instituted, as a custom, a system of periodical examination, to which all persons should submit themselves, and to which they should submit their children. If such a plan were to be faithfully and conscientiously carried out by the present and rising generation of well-educated studious medical men, I think no one can doubt, after a careful consideration of the subject, that immense benefit would be conferred upon the public."

Forty years later, George Gould¹ addressed the Philadelphia County Medical Society as follows, "I believe that there is a coming science of man, based upon a thoroughgoing and repetitive system of physiologic and pathologic examinations which will ultimately give us a genuine and all-comprising science of the entire individual life. Prophecy and prognosis are based upon a thorough knowledge of the past and present fact, a rigid understanding, in a scientific sense, of the evolution of the organism and of its present departures from a normal standard. For his children, a foresighted man must wish such an accounting, such a prophecy and prognosis; as to himself every individual adult, when he awakens to scientific consciousness, must try to look forward through

the years, and reckon up his powers and possibilities of life. Is it not at once plain," Gould asks, "that these ideals can be realized only by a system of periodic examinations and records made every year or every five years, throughout the life of the individual organism?"

In another twenty years the American Medical Association endorsed the principle of the periodic health examination and embarked upon an extensive and expensive campaign to inform, instruct and advise the medical practitioners of the country on the aims and procedures of this health measure.

Within the next few years the American Medical Association had issued a "Manual of Suggestions for the Conduct of Periodic Examinations of Apparently Healthy Persons", most County Medical Societies had endorsed the examination in principle, and many of them held symposia and demonstrations at meetings devoted to the subject. Society members submitted themselves to the examination and for a few years encouraged its use by presenting papers on the subject, agreeing with the idea on every hand, participating in the examinations of employees, joining the efforts of the Life Extension Institute, and working in a few clinics in the eastern states where health clinics were being established.

By 1931, Donald Armstrong² was forced to conclude that the medical profession had not been overly alert in seizing its opportunity and that it appears to be necessary not only to urge the public to go to the doctor for an examination, but it is necessary to encourage the doctor to prepare himself to meet this public demand, to make a reasonably uniform and thorough health examination, to utilize the diagnostic services for the patient which his community

*Read before the Louisiana State Medical Society, Monroe, April 26, 1937.

†From the Department of Preventive Medicine, School of Medicine, Tulane University of Louisiana.

affords, and to teach the patient such personal hygiene as the situation may indicate to be necessary. To quote directly, he says, "In other words the doctor must learn to practice preventive medicine."

In the seventy-five years since Dobell's serious pronouncement, the average general practitioner and most of the specialists have not taken advantage of the scientific principles underlying the periodic health examination. It is necessary to state that the periodic health examination as herein considered is a health maintenance examination and is not to be confused with the ordinary examination for physical fitness. The latter performs a useful but very limited service and is now in extensive use in industries, schools, clinics and doctors' offices. This misconception of the periodic health examination is largely responsible for its non-acceptance generally by the medical profession. Because of the failure to understand thoroughly the principles on which it is based, it appears unscientific, difficult and of little worth. It is necessary, therefore, to rediscover the periodic health examination and try to present it in a favorable light.

The ultimate aim of the examination is the *prevention* of disease and this by implication means that it should be designed to prevent the onset of disease; it is to the individual what Public Health is to the group. Public health operates on the fundamental principle of prevention, that obstruction of a cause will prevent its effects, the periodic health examination recognizes that individual effort can help to obstruct the cause; Public Health maintains that health is purchasable, the periodic health examination is certain that good health is to be had for the asking. The physician who performs the service of periodic health examinations must be convinced in his own mind that the method is based on sound scientific principles and that what limitations it possesses are not inherent in the method but are due to inadequate knowledge and technics in the prevention of disease. When the causes of all diseases are not yet known, and even when known are not always open to attack before they have produced disease, it can hardly be expected that any method based on this knowledge alone will be perfect

or even approach perfection in its results. But this is true also of curative medicine, economics, sociology and every branch of human endeavor, and in itself cannot be a sufficient reason not to try everything it has to offer.

PERFORMANCE OF HEALTH EXAMINATION

In the performance of the periodic health examination the physician has an individual before him who has passed through a definite number of months or years of experience. During that period the individual, as a biopsychic organism has grown and developed under the influence of manifold environmental factors and in the direction dictated by his inheritance. At the moment of the examination the organism shows the result of these factors; he is never perfect for there is no human perfection, but he may be relatively well balanced in all of his functions and for all practical purposes can be considered a healthy individual; or, he may have some minor developmental defect or acquired physical disability of little consequence; he may have some unrecognized or unrecognizable abnormality in structure or function within him which is not evident and he can be looked on as apparently healthy; or he may have obvious disease.

Whatever his present state may be, it is the result of some known or unknown factors that have affected him. Whether the result be health or disease, the task before the physician is to evaluate the present state of health in the light of past effects and then attempt to ascertain the causes of those effects; to determine whether they have ceased operating, or whether the processes they have instituted are static or advancing; and to inquire into the history and environment in order to reveal the presence of known factors that might be present as potential causes of disease and may later eventuate in the production of disease if circumstances permit.

From this it is apparent that no perfunctory history taking and physical examination can accomplish the desired ends. The examiner must have a thorough knowledge not only of the causes of disease but where they exist, how they are acquired and their possible effects on the functions of the organism. This is sufficient to convince the physician that the success

of a health examination will depend on knowledge, application and interest and that without any one of these three the performance falls back to the level of an ordinary evaluation of the present physical condition, albeit in the light of the past.

Most of the literature on the periodic health examination deals with technics of the physical examination itself. This arises from the partially justifiable attitude that the physical examination should reveal the functional state of the organism in all important particulars and elicit positive or suspected evidences of early disease. The greatest difficulty arises in determining how deep and extensive this search should be. A complete physiologic assay would require days and almost scientifically controlled conditions for its accomplishment. The expense and time factors make such a test generally impractical. Short of this, all *ordinary* examinations, analyses and special tests will very nearly satisfy the requirements. But this also is time-consuming and expensive and will rarely obtain the continued interest and cooperation of the examiner and the examined.

I believe that there is a middle course that can be effective very nearly within the limits of error of the more exhaustive examinations.

In the first place, most of these examinations will be performed by general practitioners, but even if done by experts, they will be open to errors of judgment and technic. What therefore becomes of greatest importance is that the examiner understand exactly what he is trying to do *in each* particular case; i. e., that the age, sex and other facts about the patient have been opportunities for certain kinds and degrees of causative disease agents to operate over a longer or shorter period of time. For this reason the child of ten has special probabilities to be investigated that are of little importance to the woman over forty and that the woman has likelihoods of disease not possible for a man of the same age. In other words, special emphasis by special examination, above and beyond the routine physical, are indicated by the qualifying factors of the particular case. This is common-sense medical practice but it must be based on scientific attitudes; it is not the common sense of a casual, expedient attitude that makes all kinds of allowance for the patient's sensibi-

lities, lack of time, unjustified inferences and hurried judgments.

The basis on which the physical end of the periodic health examination is carried out reveals the necessity and superior importance of the history and environmental inquiry which must precede it. By interrogation of the patient directly or indirectly, by gaining additional information from relatives and friends, social agencies or personal investigation by the physician or his assistant, the physician will become aware of most of the disease factors to which the patient has been exposed in the past. The inquiry must be systematized in order to include all *possible* causes and to permit some inferences as to the probable causes that could have been in operation. This can be accomplished most readily if the physician will order his thoughts in terms of the causes of disease. By so doing he will make every effort to find out whether the patient before him has been subjected to a harmful degree by inheritance factors, defects of nutritive elements, exogenous chemical agents, physical forces and energies, the vital activity of invading organisms and the psychobiologic and bio-social factors. Instead of undertaking a chronological history, which will include the known effects of these factors, he will develop each category individually and in all its aspects. For example, his inquiry under the nutritive defects will include questions about nutrition in infancy, milk formulas, dietetics of childhood, growth, history of the likely nutritional diseases, special likes and dislikes in food, habits of eating, appetite and digestive functions. Physical forces and agencies would be revealed in such things as posture, symptoms of stresses and strain in joints, ligaments and tendons, past fractures, mechanical defects in body structure such as patent inguinal rings, umbilical hernia, cleft palate, effect of ultraviolet light shown by sunburn, the physical hazards of occupation which may include such items as postural stress, exposure to injury by accident, the use of radiant materials, and the possibilities of electrical injuries.

THE PATIENT AND THE EXAMINATION

From the point of view of the patient, the most important aspect of the examination is the advice which the physician will give. In cura-

tive medicine the physician is usually in the position to advise or undertake certain procedures to correct some particular condition. In preventive medicine he can do no more than anticipate the future on the basis of probabilities. (It is taken for granted he will try to correct existing pathology if it is found at the health examination but this surpasses true prevention although it may prevent progress of the condition and complications.) Fortunately the physician is no worse off than any one else who hazards predictions. He can do no more than say that *if* such and such causes continue to operate in the future as they have in the past, they will *probably* eventuate in disease. It is this which constitutes the chief interest of those mostly concerned with preventive medicine. The probabilities must be worked out on the basis of known causes and every item of scientific knowledge which has a bearing on the etiology of disease is of importance to preventive medicine.

In arriving at the advice to be given the patient, the physician will weigh the probabilities and directly or indirectly attempt to readjust the patient's attitudes, behavior, or environment in such a way as to present the greatest likelihood that the continued operation of effective causes will be obstructed. He will correct diets, recommend dental attention, improve eliminative functions, present safeguards against skin irritants, reduce intoxication by alcohol, tobacco and coffee, give sex-hygiene and mental hygiene advice, and arm the patients with all other defenses which appear necessary in each particular case.

SPECIAL FEATURES

One of the fundamental necessities of the periodic health examination is its periodic character. With the exception of some few relatively permanent helpful procedures such as immunizations, correction of faulty habits and corrective medical and surgical procedures, the outcome of a single health examination cannot be expected to be effective beyond a few months or years. The patient may not take the advice or may fail in attempting to carry it out; the recommendations may not have been completely adequate to bring about the desired effect, and in all cases the passage of time per-

mits new factors to enter or old factors to exert more harmful effects. The time interval must be determined for each individual. I have adopted a semi-arbitrary period for certain age periods, marital states, occupations, and so forth, but make allowance always for special circumstances, particularly in the findings of the environmental study. For example, it would appear unwise to allow a woman to wait a year if she is over forty and has an old cervical laceration and it would certainly be flying in the face of probability to let an undernourished child go three or six months on the assumption that the mother will carry out all the recommendations about diet, sleep, exercise, play and rest which had been given her.

The use of specific immunizing agents and prophylactic measures is an essential part of health examination service. The physician is seldom in a position any longer to recommend preventive immunizations or not just as he sees fit. In this respect, he has certain social obligations to participate in the prevention of contagious and communicable diseases and he should remain open minded and use all of those measures which are generally acceptable to the majority of his profession. The same applies to a lesser extent to the protozoan and metazoan parasites. Because infection with these can only be demonstrated in many cases by examination of the feces, blood and urine, these examinations are now a routine requirement in all instances where any pretext to thoroughness is indicated.

SUMMARY

The attitude of the physician who undertakes periodic health examination service is of more importance than the technics of its performance. He must, above all, be convinced of the possibilities in the prevention of disease and unless he approaches his task imbued with the idea he will do neither himself nor his patient any good.

Personal hygiene can be a science but to become so, must be scientifically approached. So long as physicians fail to appreciate that nutrition, poisoning, mechanical stresses, mental states and so forth are behind the onset of many serious diseases, they will not, and should not attempt formal periodic health examinations.

But, in so failing to apply their knowledge, they are failing in the highest aim of their profession which is to prevent disease and maintain health.

The conduct of the health examination is no more difficult than most other procedures in medicine, but it is far more inclusive. It cannot, and must not be casual or colored by prejudice; it lays no claim to infallibility or miraculous results; but it does claim to be the greatest influence for the further progress of real medical service on behalf of the recipients and the practitioners of it.

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DISCUSSION

Dr. E. A. Socola (New Orleans): There is no doubt that the American public is becoming more and more awake to the realization that periodic health examinations have increased the normal life span and have avoided many tragedies in the American home.

Last year I appeared before this body with a statistical study of the school children of Louisiana, considering the physical defects as brought out by the examinations in the various Parish Health Units. In childhood and infancy we realize the following facts: First, the prenatal period has been well taken care of. In the newborn and in the first year of life, the layman is very well educated that it is wise to keep the well baby well.

The welfare of a school child has been improved upon a great deal in the past few years, but that period of life that has been neglected is the pre-school age. Many of the cases of extreme pathology that are seen in the school child, could very easily have been avoided in the pre-school period. Lucas brought out that only a very small percentage—I think it was, to be exact, fifteen per cent—of children in the United States are being taken care of or advised by public health agencies. Therefore, the responsibility lies on the practitioner, and the practitioner should realize that he is the one who must give prophylactic advice. He is the one who must give counsel as to the various diseases that can be avoided or the pathology that can be minimized, and not reach the extreme stages we see in the various hospital wards and in hospital rounds.

Furthermore, there is no doubt that as the years go by periodic health examinations will be carried

on more and more. We see that move sponsored in various organizations. Among the auxiliaries of the different parish societies, the ladies have developed that idea of each one going through an annual physical examination.

I think, as I said before, the subject was well presented, and is one of most interest to the American public.

Dr. R. McG. Carruth (New Roads): This is the greatest subject that could be presented to the American public. If you will pardon a personal allusion to myself, I am very proud of my record on the subject of periodic examinations. I have a letter that I have kept from Seale Harris, which I received many years ago, congratulating me upon the stand I had taken on this subject.

For many years I have attended the Southern Medical conventions, from Miami to Memphis, and from Nashville to Dallas. I have not attended, however, during the last few years. I have always sounded out the importance of these periodic examinations.

I have been told by an intelligent physician, "We are not prepared to give these examinations in the country." I come from a rural district. Why should we not be prepared? I proposed ten years ago in our little parish society that we begin by examining ourselves.

Our Parish Society has a very small number of members, possibly nine or ten, and frequently not more than five or six are present at our meetings. We try to meet monthly, but are glad to meet six times a year. I told my younger confreres that it would do us good to make these examinations. For thirty years, I presume, I have advocated these periodic examinations with my own patients. The more we percuss, the more we auscultate and the more we examine our patients, the more familiar we come with these methods.

It is pitiable, I have noticed, how many of our physicians, especially the older ones, are so incompetent in diagnosing early tuberculosis, one of the great diseases that has long decimated our population. We are conquering it and we will conquer it, but we have to study incipient cases, as we do not know enough about them. To examine a patient is not to feel the pulse, look at the tongue, look at the teeth, the throat and tonsils, and take the blood pressure. Everybody knows more or less about that.

We are not all bacteriologists; we are not microscopists, but in my little parish organization we have several who are very good microscopists and very good bacteriologists. My microscope was burned up in a fire many years ago, when I was in active practice. I gave up the practice of microscopy, but I send my specimens to Dr. Seemann and others to examine.

If you will allow me, I should like to recount a circumstance that bears on such examinations. A very young married woman—she was married at sixteen and came to my office when seventeen or eighteen; she had been operated on twice, once at Charity and once at Touro; was subject to spasms. She would roll out of bed, roll under the bed, roll off the gallery and under the house, fight, kick, and scream. I examined that little woman for an hour on my table, and when I got through her father and husband asked me what was the matter. I told them I did not know. I had not yet found out. I gave her, however, not a placebo but something that I thought might benefit her. It was simply trial and error, as we say, to see if I could find the diagnosis. On the next examination, I found an ingrowing toenail that would run any nervous woman wild. A lady patient once laughed at me for asking her if she had corns. This little woman had an ingrowing toenail that would run any woman crazy. I found that on my second examination. I extracted the nail, and she never had another fit. She went back to school, because she was anxious to equip herself for teaching.

If we are not able to do this work, then let us acquit ourselves by attending, as I said before, a postgraduate course.

Dr. A. E. Fossier (New Orleans): I want to thank Dr. Perkins very much for bringing up a subject which should be vital to the profession. The question of periodic examinations has been given attention for quite a while. I think, in all due modesty, I was the one who first brought it out in the City of New Orleans in 1927, when I was president of the Orleans Parish Society and inaugurated "Longer Life Week". The object of the "Longer Life Week" was to promote more periodic examinations.

I do not want to speak ahead of turn, because tomorrow I am going to read a paper to you on the subject of longer life, and prove to you that in New Orleans at least, from which I have gotten my figures, we are living very much longer than we have ever lived before, that people today have a very much greater advantage to reach a ripe old age than they had perhaps twenty, thirty, forty or fifty years ago. Also, the other point of the thesis that I wish to bring to you tomorrow is that even the so-called degenerative diseases, which have increased so much and concerning which everybody is throwing up their hands in fear of these diseases, have been a godsend, because if we are living to be older today more people are dying older, and they are even dying older from these so-called degenerative diseases.

I want to take from my paper as little as possible. I simply give you an idea of what it is about. I do want to thank Dr. Perkins for bring-

ing up the subject, and if we want to live longer and teach our people to live longer, we have to have more periodic health examinations. The only way we are going to accomplish this purpose is by education. The only way you are going to reach the people is by educating them to the possibility of doing something for them by frequent examination.

THE RELATION OF THE SPECIALIST TO THE GENERAL PRACTITIONER*

JOHN B. GOOCH, M. D.

NEW ORLEANS

The term "specialist" will be considered as one who confines his work to local pathology, particularly the ophthalmologist and otolaryngologist, and the "general practitioner" as one who is intrusted with the general care of the patient, the family physician and the internist.

There is a natural tendency for each practitioner of medicine regardless of his field to consider, more or less subconsciously, every symptom complex solely from his particular viewpoint. The purpose of this paper is to emphasize that there are certain conditions that can best be treated by a specialist; others by the general practitioner and still others by neither the specialist nor general practitioner working alone but by close cooperation of the two together. In order to demonstrate this point the following classification of symptomatology has been devised.

SYMPTOMS

1. *Local symptoms due to local disease:* Here the patient usually makes a tentative diagnosis himself and goes direct to the appropriate specialist. Examples of this would be eye-strain or acute sinus infections. Cases of this type illustrate the need not so much of cooperation between the specialist and general practitioner but rather between specialists in closely allied fields of the otolaryngologist, the dentist and the ophthalmologist. Patients with antra infections frequently consult a dentist because of pain in the upper teeth and conversely dental infections may cause maxillary sinusitis.

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

Chronic ethmoiditis causes retro-orbital pain which appears to be definitely due to the eyes, and headache produced by eye-strain is often mistaken for frontal sinusitis. The general practitioner in such instances might be called in as a sort of referee and help explain to the patient, who often has more confidence in him than anyone else, just what the local condition is and how it should be treated.

2. *Local symptoms secondary to constitutional disease:* Examples of this would be headaches of reflex origin or secondary to hypertension, endocrine dysfunction, intestinal stasis. The treatment is entirely up to the general practitioner and the specialist can only assist in making the diagnosis by exclusion. He must be particularly cautious or else he will attempt to effect a cure by local treatment where none is indicated. If the patient should consult the specialist first and he finds no particular cause in his field for the symptoms complained of he should refer the patient directly to his family physician.

3. *Constitutional or remote symptoms due to obscure local disease:* Notable examples of this, of course, would be neuritis, rheumatism or arthritis, due to foci of infection in the teeth, tonsils or sinuses in which the patient had never had a toothache, sore throat or symptom of sinus infection. Treatment at first glance would seem to be entirely local (removal of foci) but the work of the general practitioner is of utmost importance in making a thorough study of the case, assembling the reports of the various consultants and deciding with them in what order foci should be eradicated. Certainly syphilis should be controlled before nasal surgery is advised and all dental infection eliminated before a suspicious gallbladder removed. I can recall one patient in whom extensive pelvic surgery was performed because of pain that later was found to be due to arthritis of the hip and relieved by tonsillectomy; another patient was treated for years for gastric ulcer without results but made marked improvement when a latent empyema of both antra was discovered and treated.

It must be constantly impressed on patients that there is no short cut in the practice of medicine. The laity want to attribute all of

their symptoms to a single cause. A patient, with arthritis for example, hearing of a case cured by the removal of bad teeth goes directly to his dentist and he, finding diseased teeth, removes them. But if there are multiple foci naturally he is not relieved and the patient becomes prejudiced against the removal of teeth for the cure of arthritis and against the entire system of the practice of medicine in general. How much better it would be for all concerned if the dentist, to continue the illustration, after making his examination and finding pathology, would have recommended that the patient consult his family doctor before going ahead with his work. Possibly the family physician might have known of some reason why dental surgery, at that particular time, was contraindicated or after making a thorough physical examination he might find multiple foci and explain to his patient that in addition to the teeth he had diseased tonsils or a latent prostatitis which required attention as well as to have the teeth extracted in order to cure the arthritis. Then if after the teeth were removed the patient continued to have symptoms he would not be disappointed and would be willing to go ahead and have other necessary work done.

4. *Constitutional symptoms associated with local disease:* Examples of this would be the constitutional symptoms produced by acute otitis media, pyelitis, or acute tonsillitis. The patient is already under the care of a general practitioner when local complications develop. Usually the general practitioner goes ahead and treats the local condition, calling in a specialist only if it does not respond favorably to simple treatment. However he should have a clear understanding of the pathology involved and just what he intends to accomplish by therapeutic measures instituted, otherwise dangerous symptoms might be masked by palliative medication. A notable and generally recognized example of this would be giving morphine to relieve the pain of acute appendicitis, but just as untoward in its effect might be the prescribing of too much antipyretic or local analgesic in a case of acute otitis media. Under this heading would also arise the problem of evaluating various factors when there are multiple complications. Consider a case of pneumonia,

pyelitis and mastoiditis; the question comes up as to just how much the leukocytosis, hyperpyrexia and prostration are due to the ears, how much to the pneumonia and how much to the kidney. Naturally no one can give a definite answer and such cases call for the closest possible cooperation with daily or even twice daily conferences between the various specialists and each has to have a sympathetic appreciation of the difficulties of the other.

5. *Local symptoms and local disease but secondary to latent constitutional disease:* This is the type of case that is indeed most obscure. The patient has local symptoms and goes to a specialist who finds pathology and attempts to clear it up by local treatment, whereas the underlying cause is some constitutional disorder. A frank illustration of this would be the patient with an atypical luetic lesion of the oral cavity which the otolaryngologist mistakes for a local infection alone and attempts cure by topical applications. However all cases are not so easy. Consider the patient with headaches which he believes due to the sinuses and the rhinologist finds clinical evidence of a sinus infection but the predisposing factor is some endocrine imbalance, intestinal stasis or diet discrepancies.

There seems to have been a decided reversal of opinion in the last few years in regard to sinus pathology. I gained the impression from my early associates in ear, nose and throat work that chronic sinus infection was responsible for the majority of subnormal constitutional disorders. Of late it appears that the opposite is being held true; that the patient developed a chronic sinus infection because he was below par constitutionally in the first place and his poor natural resistance is still further lowered by local infection. Mithoffer, in his talk on the treatment of sinusitis at the last meeting of the American Academy of Otolaryngology after a few brief introductory remarks on the difficulties of sinus surgery, devoted practically the entire hour to the constitutional care of the patient, instructions as to diet, exercise, treatment of constipation, prescribing of thyroid extract and concluded with the statement: "We must think more of the nose as a reflex organ." Of course sinus

patients should have a careful rhinologic examination and all local abnormalities corrected if possible. However the rhinologist should be on the alert to detect pathology which he thinks might be secondary to constitutional disease, in which case he should refer the patient back to the internist or general practitioner with a recommendation that the local nasal pathology might be the result of endocrine imbalance, dietetic discrepancies or allergy, and suggest that he check or have the patient checked from that standpoint.

TREATMENT

In the field of ophthalmology local treatment is sometimes just as important as constitutional; for example, luetic iritis. In others, fundus lesions as a rule, local treatment is of no avail, only constitutional treatment or removal of foci of infection is indicated and the purpose of the specialist here is solely to make the diagnosis and examine the patient from time to time to note the progress of the lesion.

I have often felt that there should be only one doctor in charge of a patient, that too many men means divided responsibility. Yet often because of multiple complications it becomes necessary to call in a number of specialists. Here it is particularly important that the family physician maintain command of his case and see that the treatment of each part is carried out in harmony with the whole. Patients with the greatest respect and confidence in their family doctor do not expect him to know all of medicine and may feel that a specialist should be consulted, yet hesitate to do so or suggest doing so for fear of offending him. This is a situation that calls for the utmost tact and the keenly observing general practitioner will sense it and suggest a consultation before the patient has a chance to do so. Often a specialist will have nothing further to suggest, yet a timely consultation may clear up a chronic condition (skin infection) or prevent dangerous complications (tympanotomy before mastoiditis develops) or save a life (early cesarean section in an abnormal obstetrical case.)

With the advent of the various specialties the general practitioners feared that their day was over, that the entire field of medicine soon would be monopolized by specialists. I

can remember my high school instructor advising me to specialize. "The general practitioner is just an index file to the specialist," he said. However in the short time I have been practicing I have come to realize that exactly the reverse is true—that the patient belongs primarily to the general practitioner. He lends them out, on probation as it were, to the specialist requesting, and rightfully so, that they be returned to him. The specialist is concerned with doing everything in his power not only for the sake of the patient himself but in order to keep the good will of the man who referred him the case. Certainly he has no desire to do anything that could be included under the head of general practice because the moment he does he loses his identity as a specialist and can expect no more referred work. On the contrary, it is to his advantage if he can find something in his particular field that would be benefited by constitutional treatment and is only too glad to refer the patient back to his family doctor for such treatment, feeling confident that the family doctor, realizing his desire to cooperate, will not hesitate to call him in consultation in the future.

SUMMARY

In the final analysis is the personal influence of the family physician with his patients on which rests the entire foundation of our present system of the practice of medicine and our best insurance against any change in this system, is the justifying and strengthening of this personal influence and confidence. This can be accomplished by the general practitioner doing everything in his power for the patients under his care and by the fullest possible cooperation of the specialist with him, both from an economic as well as a medical standpoint.

DISCUSSION

Dr. E. L. Zander (New Orleans): I wish to apologize for discussing this paper as a general practitioner when most of my work at present is confined to obstetrics and gynecology. There are several points I would like to emphasize: First, the specialist should confine himself strictly to his specialty, if he still wants to have work referred to him. I know, for instance, of some otolaryngologists who, when called in for an influenzal pharyngitis, give general treatment, and the internist or general practitioner will be called only when the patient has developed pneumonia. This

type of case causes much of the ill-feeling and lack of cooperation between the general practitioner and the specialist.

Another evil to be corrected before we may expect to get close cooperation between specialists and general practitioners is the failure to find out who is the specialist or general practitioner who treated the patient, regardless of where the patient goes originally, before all patients are referred to personal friends. This criticism applies to small, as well as large communities, and results in cliques in smaller places and clinics in large cities.

Another cause of lack of cooperation between the general practitioner and the specialist is the neglect of the fact that when a patient is referred from the general practitioner to the specialist, before examining the patient, to get in touch with the one referring the case and obtain his viewpoint regarding what is desired in the case, and the working or tentative diagnosis. With this information the specialist is able to make a better diagnosis. An example of this is a case I saw some time ago. A patient was complaining of pains in the head upon whom I previously had made a diagnosis of carcinoma of the pancreas, confirmed by roentgen ray. He went to see an ophthalmologist, who, without getting in touch with me even after he had been told I had advised the patient to see his regular ophthalmologist, changed the patient's glasses on the basis that it should help since he had a slight error of refraction, when I really wanted a visual field. He had to go back again, resulting in useless expense to the patient. It finally turned out that the patient had metastasis of the carcinoma to the skull.

Finally, I believe the specialist should either telephone or write his findings to the general practitioner, in order that the latter may encourage closer cooperation between the patient and the various specialists whom it may be necessary for the patient to see, because fundamentally the family physician is the basis upon which the practice of medicine is founded, and it is to him the family looks, next to God, for advice and consolation in times when life and death depend upon the words of advice uttered by the mouth of the family doctor, the friend, as well as the medical adviser of all humans.

Dr. John T. Crebbin (Shreveport): I believe Dr. Gooch has emphasized the fact that the general practitioner, the one who refers the patient, is the one who is the general of the *modus operandi*. So often the patient has been referred to some particular specialist, who feels at liberty to refer him further to an otolaryngologist or a roentgenologist, whereas it is the one who originally referred the patient who should do this.

There are many remote symptoms which appear which can be referred to infected tonsils and teeth. When we cooperate with the general practitioner, with the various other specialists who refer work, the patient will get the benefit of these various consultations.

EPIDURAL ANESTHESIA IN GYNECOLOGY AND OBSTETRICS*

P. GRAFFAGNINO, M. D.†
NEW ORLEANS

Since the discovery of chloroform and its anesthetic qualities in the middle of the last century, a constant search has been made for safer and more efficient methods for the relief of pain during labor and in surgical operations. As a rule the surgeon or obstetrician is the responsible individual in the application of any type of anesthesia, and since it cannot be questioned that all known methods today carry a certain amount of risk, the search still goes on for a method that is effective in nearly all cases, harmless, safe, foolproof, simple in application, inexpensive and available at all times.

Recently, the epidural or peridural method of anesthesia for surgical, gynecologic, and obstetric work came to my attention and as it gave promise of being an advance over the other methods of this type, I decided to try the method in some of my gynecologic surgery and obstetric practice.

THE METHOD

The method involves no new principle of anesthesia as this was described by Corning in 1884 when he demonstrated that a solution of cocaine injected in close proximity to a sensory nerve (in the epidural space) anesthetized not only the area injected but the entire region supplied by the nerve with which the solution had come in contact. Later, Cathelin about 1900 and Sicard in 1901 tried epidural injections of cocaine for therapeutics and surgery but used the sacral route and obtained blocking of the lower nerve roots. Stoekel, a German ob-

stetrician, in 1909, employing the newer and less toxic drugs eucaïne and procaine, gave a series of injections into the sacral canal during labor and published his results calling the method "sacral anesthesia."

Lawen of Leipsig, in 1910, gave the method careful investigative study and by injecting colored fluids into the sacral canal of cadavers demonstrated that the fluid never appeared in the spinal canal and proved that the epidural space was completely separated from the sacral canal by the dura. By this method he performed all of the common operations on these parts and was the first to employ sacral anesthesia for operative work.

As Bier rediscovered and recast Corning's subarachnoid anesthesia, Pagés, a Spanish physician and surgeon, in 1920 rediscovered and recast Corning's epidural anesthesia as well as utilized the work of Cathelin, Sicard, Stoekel, Lawen and others on sacral anesthesia, his method being only an extension of the sacral at a higher level.

Pagés' work remained unappreciated as this brilliant young Spanish surgeon died soon after publishing his first report on the method and it was not until 1930 that Dogliotti published what he considered original—his new method of block anesthesia called by him "segmental peridural spinal anesthesia" and described by him in the following language which, I believe, describes accurately what this method is intended to do:

"A method intended to produce as a result of a single injection which does not involve the subarachnoid space, a complete, sufficiently long and deep anesthesia in any part of the body to enable any surgical intervention to be carried out. By this method the advantages of local anesthesia with its freedom from risk are combined with those of subarachnoid spinal anesthesia with its powerful and satisfactory action. Briefly described, it is a procedure which makes it possible to obtain in the upper parts of the body just as excellent results as may be had in the region of the sacro-coccygeal plexus after sacral extradural anesthesia has been performed."

ANATOMY

The epidural space is described in all standard textbooks of anatomy. It is the space be-

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tween the dura and the wall of the spinal canal. The space is much wider on the posterior aspect than on the anterior. It begins at the foramen magnum and ends below at the terminal extremity of the vertebral canal. It has no connection with the subarachnoid space. It is not a closed sac and contains considerable connective and fatty tissues as well as numerous blood vessels. A loosely and lightly attached connective tissue from this region extends around the dura and surrounds in skin-like sheaths the roots of the spinal nerves up to the spaces between the vertebrae, where it continues uninterrupted into the intervertebral foramina to join the connective tissue adjacent to and external to the vertebrae. These intervertebral spaces vary in different individuals as well as in the different locations of the vertebral column.

SUGGESTED ANATOMICAL FACTORS IN EPIDURAL ANESTHESIA

(By Dr. Beryl I. Burns, Department of Anatomy)

The epidural space is a space of considerable size and filled with a fatty areolar tissue containing a rich venous plexus. The dura mater of the spinal cord presents only the inner layer of the cranial dura mater, the outer fibrous layer of the cranial dura being absent. The latter is represented in the vertebral canal by the periosteum of the wall of the canal. Thus the venous plexus of the epidural space may be regarded as corresponding, in situation, with the cranial venous sinuses. This meningeal layer of dura mater is, nevertheless, a dense fibrous membrane through which fluid would not be expected to pass readily.

Continuity of Dura Mater with Epineurium: The dura mater is prolonged along the spinal nerve roots, for a distance which varies somewhat in the different levels, to become continuous with the epineural sheaths of the spinal nerves. This sheath consists of a much more loosely arranged fibrous tissue than that of the dura and it is conceivable that infiltration of fluid through it would be free as compared with the denser dural sheath.

Components of Spinal Nerves: Ranson has shown that the spinal nerves contain a large number of unmyelinated somatic fibers and that these unmyelinated fibers, together with fibers having very thin myelin sheaths, subserve the functions of pain and temperature. Since

these functions are first and most consistently affected by epidural anesthesia, it is suggested that the absence or thinness of a myelin sheath may be a factor in the apparent selectivity of the anesthetic administered epidurally.

SUGGESTED NEUROLOGICAL FACTORS IN EPIDURAL ANESTHESIA

(By Dr. Howard Beard, Department of Biochemistry)

Nerve tissue is composed of a large amount of alcohol-ether soluble substances, and our chemical knowledge of these substances is due largely to the work of Thudichum in 1884. The phospholipins and related compounds are very complex and large in amount. The function of the myelin sheaths, which are composed of glycolipids, phospholipids and cholesterol, is largely unknown. It is generally believed, however, to have two functions; (a) insulating, which serves to prevent the spread of impulses; and (b) nutritive. The latter is supposed to be the main function of the myelin sheath.

Nerve tissue has a very keen respiration and oxidation metabolism, the greatest of any other structure of the body. This metabolism is dependent on oxygen, and large amounts of carbon dioxide are produced, the amount of which usually runs parallel to the activity of the tissue. It is probably this high rate of metabolism of the nerve tissue that makes it so sensitive to the action of many types of drugs of all kinds.

The phenomenon of conduction of the nerve impulses appears to be closely related with the respiration of the tissue. Therefore it is possible, but not yet proved, that the action of anesthetics upon the nerve tissue is to slow up greatly the rate of its metabolism for a certain length of time, with resulting blocking of the sensory impulses along the nerves in question.

PROCEDURE

The patient is placed in the lateral decubitus position with the shoulders and hips vertical to the operating table. The back is cleansed with an antiseptic solution and draped, as in performing a spinal puncture. The second lumbar interspace is located by palpation, and at this site, an intracutaneous injection of a small quantity of novocain solution is made. Through this wheal a short beveled, 20 gauge spinal needle is introduced until its tip is well engaged in the interspinous ligament. The stylet

is withdrawn and a small glass indicator is connected to the spinal needle and filled with solution. An assistant then arches the back of the patient by bringing the chin down onto the chest and flexing the thighs and legs. The needle is then slowly advanced through the intraspinous ligament, and on puncturing the yellow ligament a snap is felt and the tip of the needle is now in the epidural space. The fluid in the glass indicator will be seen to be sucked into the needle at this point due to the negative pressure present in the epidural space. The anesthetic solution may now be injected into this space. The first 10 c.c. of fluid is injected slowly and a period of five minutes is then allowed to elapse. At the end of this time the sensibility of the lower extremities is tested and if the patient has no anesthesia and can move the legs, one may be certain that the needle is not in the subarachnoid space and can proceed to inject the remainder of the solution. The anesthetic should be given slowly, a short time being allowed between each 20 c.c. to allow for diffusion of the solution.

The point brought out by Odom should be emphasized: that "the back should not be arched until all has been prepared prior to the introduction of the needle into the epidural space. The flexion of the back causes an inflow of blood into the peridural venous plexus which might dilate the veins and compensate in part for the increased negative pressure and at the same time increase the likelihood of venous puncture."

We have been using the second lumbar interspace as a routine to enter the epidural space. This interspace is advantageous in that the epidural space is larger in this region than higher up in the spinal canal (Odom, Houdard, Judet, Mathey) and the spinous processes of the vertebrae come off in a horizontal plane, whereas higher up they come off in a more vertical plane, making for difficulty in the injection of the anesthesia (Giordanengo).

DRUGS
DURATION OF ANESTHESIA

Five hundred to one thousand milligrams of procaine crystals dissolved in 50 c.c. of sterile water or normal saline without ephedrine or adrenalin is used. The amount of procaine used depends upon the type of operation to be per-

formed, the smaller doses being used for operations of short duration.

Onset of Anesthesia: The onset is variable. In some patients it is almost immediate, and in others delayed more than thirty minutes.

Duration of Anesthesia: The duration depends on the amount used and the tolerance of the individual to the drug used; usually from three-quarters of an hour to well over two hours. The method being only a regional block anesthesia, it will have its failures and successes in the same fashion as results from the use of sacral anesthesia, 15 to 20 per cent partial or complete failures.

Effects: After ten minutes there appears a region of anesthesia corresponding to the area where the puncture was made, which little by little rises and extends downward. It may reach upward as far as the neck or higher, and to the end of the extremities downward.

EPIDURAL ANESTHESIA IN GYNECOLOGY

In the combined gynecologic services at Charity Hospital, this method has been used in 127 cases. On these 127 cases, 225 operations were performed.

ANALYSIS OF CASES

TABLE I

Ages	15-20	20-30	30-40	40-50	50-60	60-70
No. of cases	14	43	45	19	5	1
Total number of cases						127

TABLE II

Race

White	66	Colored	61
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TABLE III

Operations

Oophorectomy	6
Dilatation and curettage	11
Perineorrhaphy	12
Resection varicose veins in broad ligament	1
Suspension of uterus	13
Appendectomy	39
Ectopic pregnancy	5
Salpingo-oophorectomy	24
Cesarean section	11
Supravaginal hysterectomy	21
Conization of cervix	27
Fundectomy	4
Exploratory laparotomy	4
Posterior colpotomy	3
Salpingectomy	12

Excision ovarian cyst.....	5
Application of radium	6
Panhysterectomy	1
Amputation of cervix	1
Myomectomy	3
Hernicplasty (incisional)	1
Hemorrhoidectomy	1
Presacral sympathectomy	2
Anterior colporrhaphy	5
Plastic on urethra	1
Resection of ovary	1
Vaginal hysterectomy	2
Separation of abdominal adhesions	2
Repair third degree laceration of the perineum	1
Total number of operations.....	225

A study of the above tables shows that practically all of the major and minor gynecologic operations have been performed under this form of anesthesia.

RESULTS IN 174 CONSECUTIVE GYNECOLOGIC OPERATIONS UNDER EPIDURAL ANESTHESIA

Excellent	144
Partial or complete failures.....	30
Reactions	0

17.2 per cent partial or complete failures

As shown above, it was found that 30 cases had to have an additional anesthetic agent. The following combinations were recorded:

Epidural and ether.....	10
Epidural and ethylene.....	14
Epidural and evipal.....	3
Epidural, spinal, ether.....	1

DISCUSSION

Although this method has been used by us for nearly all of the major and minor operative procedures and although the method may be theoretically safer than spinal, we find that as a result of its variable anesthetic properties and somewhat technically difficult administration and the required length of time before complete manifestation of its analgesic properties, it does not compare with the simplicity of administration and almost 100 per cent complete anesthesia obtained by the subarachnoid method.

The slowness of its onset, the 17.2 per cent partial or complete failures and the occasional toxicity make it undesirable for routine gynecologic operations.

The method has a definite but selective place in gynecologic surgery.

EPIDURAL ANESTHESIA IN OBSTETRICS

In the obstetric services of Charity Hospital this form of anesthesia has been used in 77 cases.

ANALYSIS OF CASES

TABLE I

Ages	11-20	20-30	30-40
No. of cases	23	47	7
White.....	31	Colored.....	46

The age group varied from our youngest patient eleven years of age to forty years, the majority of cases falling in the age group 20-30 years. There were 46 colored patients and 31 white patients to whom the anesthetic was given.

TABLE II

Types of Delivery

Spontaneous	23
Low forceps and episiotomy.....	24
Mid-forceps	9
Cesarean sections.....	11
Versions and extractions	3
Duhrssen's	1
Embryotomy	1
Twins with Piper's forceps.....	1
Precipitation	1
Scanzoni and episiotomy	3

It can be seen from this table, that all the major obstetric procedures can be handled with ease and with the conscious cooperation of the patient. The only procedure which we would not advise performing under epidural anesthesia is version and extraction. This might prove difficult because the uterine contractions continue unabated under the anesthesia and for version one needs relaxation in order to accomplish it easily and without danger to mother or child. This point was also brought out by M. P. Rucker in 1930.

TABLE III

Positions and Presentations

O. L. A.	24
O. D. A.	5
O. D. P.	6
O. D. T.	4
L. S. P.	2
O. L. T.	2
O. L. P.	2
L. S. A.	1
Not Recorded	31

The positions and presentations of the deliveries are included so that the reader may see the variety of cases dealt with.

TABLE IV
Cesarean Sections
Indications

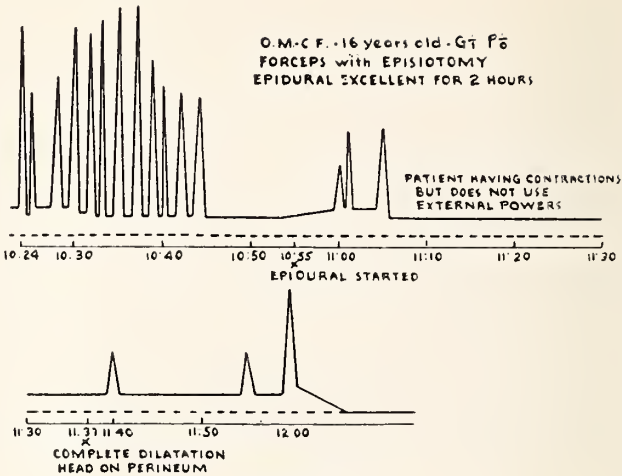
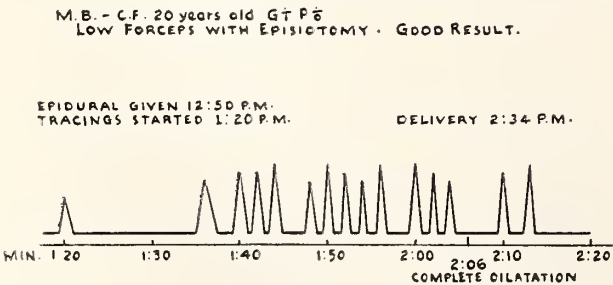
- 1. Central placenta previa (placenta covered three-fourths of os).
- 2. Contracted pelvis with roentgen ray evidence of fetopelvic disproportion.
- 3. Generally contracted pelvis with roentgen ray evidence of fetopelvic disproportion.
- 4. Flat pelvis with roentgen ray evidence of fetopelvic disproportion. Maternal signs of exhaustion.
- 5. Generally contracted pelvis (previous cesarean section done).
- 6. Post-maturity, contracted pelvis with roentgen ray evidence of fetopelvic disproportion.
- 7. Generally contracted pelvis with roentgen ray evidence of fetopelvic disproportion.
- 8. Flat pelvis, fetopelvic disproportion; rheumatic heart disease (sterilization and section).
- 9. Generally contracted pelvis; previous cesarean section.
- 10. Contracted pelvis; diabetes.
- 11. Chart not available.

The cesarean sections performed by our staff are shown, giving the indications for the sections.

TABLE V Amount of Anesthetic Used		
500 mg. novocain)	54	
2 ampoules pantocain)		
60 c.c. 1% procaine	13	
50 c.c. 1% procaine	2	
50 c.c. 1/10% pantocain	2	
50 c.c. 9/10% procaine)	3	
1% pantocaine)		--
100 c.c. 1% procaine	3	

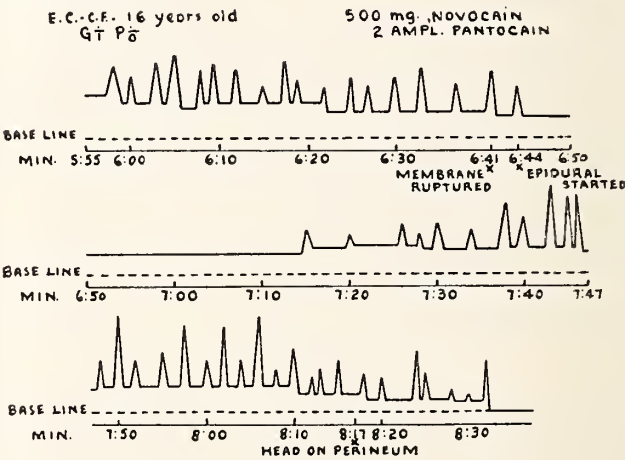
ONSET OF ANESTHESIA

The onset of the anesthesia was observed to vary considerably after the injection of the anesthetic solution. In some cases the patients



were given almost immediate relief and in others, 20 to 30 minutes elapsed before the patient was relieved of the pains of uterine contractions.

The uterine contractions were not interfered with in any of the cases. They continued unabated and often seemed increased in frequency and intensity.



TIME OF ADMINISTRATION OF ANESTHETIC

In administering the anesthesia, an attempt is made to determine how soon the patient will deliver in order that the anesthesia will not wear off before delivery has occurred. Knowing that the anesthesia lasts from one and a half to two hours, an attempt should be made to judge the cases individually and according to the procedure anticipated in order to complete the delivery. It was found that in primiparae, if the injection was given when the cervix was almost completely dilated and the head was at station 0 to plus 1, the patient had a painless second stage of labor and that after delivery, there was time to repair episiotomies or lacerations.

tions, if they occurred, without any additional anesthesia. In multiparae, it was more difficult to determine the time to administer the anesthesia. In these cases the optimal time was found to be when the patient was having strong, regular contractions and the cervix was 4 cm. or more dilated. In a few cases in which the time of delivery was misjudged, it was necessary to supplement the epidural anesthesia with nitrous oxide in order to terminate the labor.

At no time was there asphyxia in the newly born infants which could be attributed to the use of the epidural anesthesia.

The third stage of labor is also benefited by this form of anesthesia in that the tonicity of the uterus is not interfered with and blood loss is lessened.

TABLE VI
Results

Good	69
Partially successful	5
Reactions	3

Three patients had a reaction to the anesthetic which was administered. One case was a mild reaction for which adrenalin and caffeine were administered and the patient was promptly relieved. The second case occurred during cesarean section when the patient passed into a state of profound shock. Treatment for shock and artificial respiration were started and after the delivery of the infant the patient slowly rallied and made an uneventful recovery. The third case having a reaction was a primipara who apparently received some of the procaine solution into the subarachnoid space, as she lost consciousness and it was with difficulty that respiration and circulation were restored. The patient was brought back to consciousness and no deleterious effects were manifested when the birth of the child with low-forceps took place.

The reactions which we had were attributed to two causes: Either there was some fault in the technic and the anesthesia was given into the subarachnoid space; or the patient had a sensitivity to the novocain solution used. The operator must be extremely careful in administering the anesthetic to make sure that the solution is entering the epidural space and that he has not traversed this space and is depositing the solution into the subarachnoid space.

CONCLUSIONS

1. The anesthetic can be administered to all patients in the child-bearing age.
2. All the major obstetric operative procedures can be performed under this form of anesthesia safely and with the conscious cooperation of the patient, except version.
3. The uterine contractions are not interfered with after giving the anesthesia; there is no asphyxia in the newborn ascribable to the anesthetic; blood loss is lessened in the third stage due to the tonicity of the uterus.
4. Although there are dangers in the administration of this form of anesthetic, it is believed that most of the unfavorable reactions which occurred were probably due either to faulty technic or sensitivity of the patient to the anesthetic solution.
5. This form of anesthesia should be mastered by every experienced obstetrician and anesthesiologist to widen the scope of his anesthetic field.

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DISCUSSION

Dr. H. Vernon Sims (New Orleans): Dr. Graffagnino has covered the subject of epidural anesthesia so thoroughly, that there is really nothing I have to add. He has done a great deal of pioneer work in this particular subject, and I only

want to endorse everything that he has said without making any contribution to the subject of epidural anesthesia. However, you will note on the program, the title of his paper is "Epidural and Sacral Anesthesia," and that, of course, will give me an opportunity to say a word or two about sacral anesthesia.

I have done a great deal of work in sacral analgesia in gynecology, starting about ten years ago, in 1927 or 1928. When I reported my last series of cases I had 500 of them and that was in 1934 when the Southern Medical Association met in San Antonio. Since then I have had over 100 or 125 cases.

Sacral is a form of epidural anesthesia in that the anesthetic is deposited in the sacral canal; it is not in the subarachnoid space but is around the dura. Sacral anesthesia I believe to be as safe as is infiltration with novocain in the skin and subcutaneous tissue. I wish to call your attention to the fact that it must be distinguished from spinal as it is extra dural and carries with it none of the risks of spinal.

Sacral anesthesia is secured by means of a single injection in the sacral canal. Its effect may be augmented by the addition of infiltration analgesia, if necessary. Operations under sacral analgesia may be done on the external genitalia, perineum, anus, prostate, rectum, ischiorectal fossa, vagina, cervix, bladder, and the urethra, and may be done painlessly with a single injection into the sacral canal. This single injection in the sacral canal properly done, with the correct strength of solution, will block off the second, third, fourth and fifth sacral nerves, and the single pair of coccygeal nerves. If you recall your anatomy, you will remember that the areas mentioned are supplied by the pudendal and coccygeal plexuses. Therefore, it is ideal according to the anatomic distribution of nerves.

I have used sacral analgesia since 1927-1928. In no case has it been necessary to give the patient inhalation anesthesia, and in only two instances was it necessary to supplement the sacral injection with procaine infiltration locally in the perineum. In four cases, however, there were reactions, which at first startled me considerably, fearing the patient was about to succumb. This was manifested by twitching and a very rapid increase in pulse rate. But fortunately, in all cases, before deciding what to do, the reaction subsided. These reactions may have been due to individual susceptibility, or maybe in one or two instances, due to too rapid absorption through a vein. Of course, you understand the venous plexus in the sacral canal may be pierced and rapid absorption will result.

I have used this sacral anesthesia in: dilatation and curettage, conization of the cervix, application of radium, cauterization of the cervix, amputation of the cervix, anterior colporrhaphy, excision of fistula in ano, hemorrhoidectomy, vesico-vaginal fistula, laceration of the perineum, perineorrhaphy, excisions of fibroma of vagina, posterior colpotomy, plastic repair of the urethra, excision of vulvo-vaginal glands, cauterization of chancroids.

As to the technic of sacral anesthesia this is an ordinary picture of the sacrum, showing the sacral hiatus, which is the place you must find. The sacral hiatus is located by passing the left forefinger along the middle of the sacrum until it reaches a depression between the juncture of the coccyx with the sacrum. The two sacral cornua and the fourth sacral spine are the three landmarks. You feel for the prominence there and get the opening, a very large opening; you can study it by glancing at the skeleton.

(Slide) This shows the vertebral column with the back of the sacrum removed. It shows how nicely this is arranged for this type of anesthetic. Notice the subarachnoid space here. Never have the needle more than two inches in the sacral canal.

(Slide) This diagram is self-explanatory. The patient should be properly prepared the night before with one of the barbiturate acid derivatives, and then give morphine on call. I use a 20 gauge spinal needle, nickeloid, which will not break. After the subcutaneous tissue is thoroughly anesthetized with procaine solution, introduce the needle to the anterior wall of the sacral canal, withdraw it slightly and with the hub of the needle depressed into the gluteal cleft, it easily slides up into the sacral canal a distance of two inches.

The amount of solution introduced is important. Of course, before making injections it is necessary to be sure you are not in the subarachnoid space or in a blood vessel. I use from 60 to 100 c.c. of 1% procaine solution. Different amounts are used in various cases. I usually use about 80 c.c. of one per cent procaine solution. It is well to introduce the solution slowly and while doing so, move the needle from one side to the other in the sacral canal. It is essential that sufficient time be allowed for the injection to take effect before starting the operative procedure. As a rule about 15 minutes is sufficient. Success depends upon one's technic, however. One must learn when the needle is in the sacral canal and enough fluid must be injected to fill the canal. It is well to study the bony skeleton so as to be able to judge the size of the sacral opening, the direction of the sacral canal, and the

character of the bony landmarks. It is also well to practice palpating the sacral hiatus on a number of patients before attempting this procedure. The mistake is often made of introducing the needle above the hiatus when it just slides along the sacrum in the soft tissues and does not enter the sacral canal. If the hiatus is palpated carefully and the needle is introduced just below and then depressed upward, it is hard to miss the sacral canal. If in some instances there are areas in the operative field which appear sensitive to pain, it is rather a simple matter to infiltrate the area with procaine solution.

Sacral analgesia is simple and safe. It should be more extensively used in gynecology.

Dr. Ansel Caine (New Orleans): I wish to ask Dr. Graffagnino a question. He said two ampoules of pantocain. How many milligrams in each ampoule? It comes in various sizes.

Dr. F. J. Chalaron (New Orleans): It seems strange to have a urologist discuss a paper on gynecology but I am interested in sacral analgesia. Some years ago, I wrote a paper on sacral analgesia and discussed the originators of this method, which originally was used not for the relief of pain but for the control of certain other conditions.

There were certain points Dr. Sims brought up in favor of sacral analgesia and certain contraindications. One is that in the arthritic patient where the canal is so small there is difficulty in overcoming anatomic deformity. The second is the amount of analgesia. Goldstein and others used sacral analgesia as a routine procedure in performing cystoscopies.

As to the quantity of anesthetic, my experience has been such that I prefer less of a stronger solution than a large quantity of minor strength, my objection being that with a large quantity, you get much higher analgesia and some times most disagreeable reactions.

Dr. Peter Graffagnino (New Orleans): There are two points in this form of anesthesia that have attracted the attention of all who have come to use it. The first is: Why is it that novocain solution introduced into the epidural space gives anesthesia that involves the sensory nerve roots and not the motor, whereas, the solution introduced into the spinal canal (subarachnoid space) causes complete sensory as well as motor paralysis, the degree depending on the amount of anesthetic solution given? The other point is: Why is it that in obstetrical anesthesia the patient gets complete relief of all sensory pain, that is, abdominal reactions and all other reactions that are of sensory nerve origin, when given in the epidural space about the level of the second lumbar space? In order to arrive at a clear understanding of these points, I asked Dr. Burns, Head of

the Department of Anatomy, and the explanation given by him is incorporated in the body of the paper.

While sacral anesthesia in obstetrics has proved fairly successful, we were unable to account for the large percentage of partial or complete failures until McClelland in 1932 proved by animal experimental work that all of the sensory nerve impulses of the lower abdomen and uterus are carried through the eleventh and twelfth dorsal roots. The introduction of the anesthetic solution in the sacral canal would diffuse upward in the majority of cases and block these afferent nerve impulses; where the introduction of the solution into the second lumbar region invariably reaches all of these nerve roots as the solution diffuses upward and downward, thereby giving complete analgesia.

In answer to Dr. Caine, pantocain comes in 2 c.c. ampoules, containing 0.1 of 1 per cent solution.

PELLAGRA SECONDARY TO LESIONS OF THE GASTROINTESTINAL TRACT*

W. M. SCOTT, M. D.

SHREVEPORT, LA.

Pellagra secondary to lesions of the gastrointestinal tract has been reported frequently in the northern United States, while we who live in the endemic area seldom mention this as a cause of so common a malady seen in this section, especially by those who practice in rural communities or those who have services in charity hospitals.

Pellagra has been classified as: (1) Simple pellagra, due to a deficient dietary intake, and included in this group is the alcoholic pellagra, in which prolonged consumption of alcohol has interfered with the normal diet; (2) secondary pellagra, due to lesions of the gastrointestinal tract, which prevent absorption of the necessary elements.

ETIOLOGY

Turner¹ in 1929, reported 16 cases of pellagra associated with organic lesions of the gastrointestinal tract, and was one of the first to emphasize the importance of these lesions as

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

a causative factor. Eusterman and O'Leary² reported 13 patients with secondary pellagra under their observation, several of whom were on an adequate diet as to calories and vitamins, and showed they had some obstructive or irritating lesion as a causative factor. It must be understood that a person on a normal diet may, either from destruction or failure of absorption of vitamins during digestion and passage through the alimentary tract, develop a deficiency, and pellagra results.

Pellagra is considered as a disease found only in the lower classes, but it is not an uncommon condition found in those who from some lesion of the digestive organs, as peptic ulcer, gastric malignancy or cholecystitis, restrict their diet over long periods of time for relief of their dyspepsia, and avitaminosis with pellagra results.

Pellagrins in this section are usually of the Negro race. Their mental and financial status is very low, and they do not consult a physician for the typical dermatitis but wait until the mouth is sore or an intractable diarrhea develops, and then due to their financial condition no complete study is possible. They are advised as to diet, given brewers' yeast, and dismissed. The mild case recovers spontaneously and the patient with severe, especially the secondary type, grows worse and dies or enters a charity hospital for treatment, sometimes too late, as the mortality rate is exceptionally high in this type of patient when any form of surgery is attempted.

Until recently Goldberger's work on the P-P factor in the production of pellagra has been accepted. But vitamin B₂ or G has been proved to consist of at least two factors, lactoflavin and B₆. Lactoflavin has been shown by Dann³ to be of no value in the treatment of pellagra in man, and the chemical nature of B₆ is not certain. Spies⁴ and his colleagues recently reported results on 50 cases of severe pellagra with a high caloric, high protein diet with a large amount of brewers' yeast. Their results were excellent, but the possibility of a relapse in a short time is very likely in a large proportion of these cases, as this class of people are unable financially to secure the proper food, or will not do it. And it has

been my experience that they very soon relapse. The interesting thing is that other members of the family on the same diet seldom develop the disease.

I think the work of Sydenstricker⁵ and his colleagues, imitating the work of Castle and his associates on pernicious anemia, is outstanding and may clarify the unknown dietary factor. They tested six cases of known pellagra with normal gastric juice as a source of a hypothetical intrinsic factor and their conclusions were that, on the quantity of this intrinsic factor present depends the amount of absorption of the extrinsic factor or vitamin B₂ or G. They also contend that individuals may retain enough of the intrinsic factor to recover on diets grossly deficient in vitamin B₂.

I had on my service one patient not reported in this group who was admitted for pellagra and diarrhea consisting of 10 or 15 stools daily. He gave a history of having had pellagrous lesions on his hands and attacks of diarrhea each spring for a number of years and always recovered without medical treatment or advice. He was emaciated, the mouth was raw and beefy, the blood picture showed a secondary anemia with low color index and free hydrochloric acid present in gastric contents. The stools were negative for ameba. He was placed on anti-pellagra diet and given yeast in large quantities with dilute hydrochloric acid, and there was very little improvement in symptoms, especially the diarrhea. After three weeks of this regime he was given 150 c.c. of normal gastric juice through a duodenal tube each morning, and by the third day his diarrhea was two or three times daily. His general condition grew worse and he died 42 days after admission. At autopsy it was shown that he had a carcinoma of the pancreas with metastasis. There was something in the gastric juice besides hydrochloric acid that instantly relieved this patient's diarrhea.

TREATMENT

Liver extract parenterally has been used in the treatment of pellagra for its vitamin B₂ content and its effect on the hematopoietic system. Miller and Rhoades⁶ report the effect of liver extract on the small intestine in a case of sprue without anemia and showed there

was a return to a normal form and function by roentgenologic studies, as well as relief of symptoms. Castle and his associates⁷ pointed out the close relationship of sprue, pernicious anemia and pellagra, especially as regards the blood, the gastrointestinal system and the nervous system. The fact that liver extract benefits all of these conditions shows their similarity and that lack of an intrinsic factor or failure of absorption of it is an etiologic factor. The so-called secondary pellagra from alcoholism is simple pellagra due to lowered food and vitamin intake, and Strauss⁸ has shown that this type improves on a high protein and vitamin B diet continuing on their usual intake of alcohol.

PERSONAL EXPERIENCES

There are fourteen cases reported here: seven with typical lesions in the rectum of lymphogranuloma inguinale, five of which showed strongly positive Frei test, and in the remaining two the pathology was pathognomonic of this disease; two with carcinoma of the stomach; two with definite evidence of malignancy with metastasis; and one each of the following—stricture of esophagus, rectal polyp, recto-vaginal fistula, and amebiasis. The pathology of lymphogranuloma inguinale in the female with its rectal and perirectal involvement so undermines the patient's health and nutrition that a profound cachexia develops and pellagra results. Even with intensive pellagra therapy they progressively grow worse and the only hope of cure would be to recognize the condition early and to direct treatment toward the lymphogranuloma inguinale infection and prevent the extensive involvement of the rectum that usually follows. The various lesions of the gastrointestinal tract that have been reported as causative factors in the production of pellagra are so varied and so numerous that they will not be detailed here. But any lesion that will not allow the proper absorption of the necessary elements and vitamins will eventually cause a deficiency and pellagra.

During 1935 and 1936 there were admitted to the Shreveport Charity Hospital 87 pellagrins with 27 deaths, or a mortality of 31 per cent, which is very high. But this hospital

does not have an out-patient department and admits only those of a severe degree, which is the explanation of this high mortality rate. There were 19 autopsies done by Dr. W. R. Mathews, pathologist at the Hospital, and the high percentage of lesions of the gastrointestinal tract causing pellagra that were found is the reason for this report.

Some of these cases have not had a complete laboratory examination but in those cases autopsies were done and a definite diagnosis was made. The pellagra diet used here is a high protein, high vitamin diet of about 3,000 calories with yeast. These patients are placed on this diet as soon as admitted, but if they are unable to take this diet they are given a softer one with as much protein as possible.

CASE REPORTS

Case 1. E. J., aged 49, colored male, was brought to the hospital on January 1, 1936 by officers of the Parish jail, where he had been placed due to dementia. No history could be obtained because of his mental condition but the officers said that he vomited all food given him. Examination showed a very weak, emaciated and dehydrated Negro male talking incoherently. The skin was dry, hypertrophic-dermatitis over hands, forearms, feet and legs, with considerable wasting of musculature. The tongue was red, ulcerated, and the mucous membrane in foul condition. The examination otherwise was negative. Laboratory: Kahn, negative; urine negative; red blood cells 2,450,000; hemoglobin 40 per cent; white blood cells 7,000; gastric analysis, no HCl, 155 c.c. residue. As will be shown later this was taken from esophagus. Treatment: Glucose was given intravenously; also a pellagra diet, liver extract and dilute hydrochloric acid. There was no improvement and the patient died on February 17, 1936, twenty-two days after admission.

Autopsy: In the right pleural cavity there is a large thick-walled compressible sac, which is behind the pleura, the size of an adult's stomach, and the posterior and medial portions of the right lower lobe of the lung is lifted by it. This is found to be due to a dilated esophagus. The wall of the esophagus is greatly thickened, nodular and trabeculated. The esophagus in neck is highly dilated to the level of the larynx, where it undergoes sharp constriction to about 1½ cm. in diameter. The stomach is small and empty. Pseudo-diphtheritic colitis present.

Comment: As was shown by the autopsy this

man was unable to get enough food through the esophagus to maintain life.

Case 2. J. L., aged 52, colored male, entered the hospital on September 6, 1935, for stomach trouble and pellagra. Examination at that time showed pellagrous lesions on hands and feet, secondary anemia, and roentgen ray examination of gastrointestinal tract was reported as "duodenitis." He was put on anti-pellagra diet, yeast and iron, and discharged. He improved remarkably until about two weeks previous to his last admission on January 20, 1936. He stated he began vomiting his meals and had pain in epigastrium at this time. Examination: The patient was a fairly well developed, poorly nourished and dehydrated Negro male, with typical pellagra lesions on hands, with atrophic tongue. There was a palpable mass in the epigastrium with generalized tenderness over the entire abdomen. The examination otherwise was negative. Laboratory: Red blood cells 1,810,000; hemoglobin 46 per cent; no gastric analysis made. Treatment: He was given glucose intravenously and liver extract parenterally. He vomited all food by mouth and it was impossible to get a roentgen ray. The patient continued to grow worse and died on January 30, 1936, ten days after admission.

Autopsy: An annular, ulcerated carcinoma of the pyloric end of the stomach was found. The process appears to stop shortly at the pyloric ring. The regional lymph nodes are involved. Microscopic examination of tumor was adenocarcinoma, grade III.

Comment: This man responded to previous pellagra therapy in spite of the carcinoma present.

Case 3. J. T., aged 51, colored male, had always been in good health until six weeks previous when he developed a diarrhea of five or six times daily. No tenesmus or blood. Two weeks later the mouth became sore and he began vomiting his meals, and then consulted a physician. A diagnosis of pellagra was made due to lesions on hand, and he was put on a diet of meat, eggs, milk and vegetables, yeast one tablespoonful three times daily. There was no improvement and he entered the hospital on May 8, 1935. Examination: Typical pellagra lesions on hands and forearms; tongue red and ulcerated. There was generalized tenderness to pressure over abdomen, especially in epigastrium; some ascites, no organs palpable, no masses felt. Laboratory: Red blood cells 4,000,000; hemoglobin 80 per cent; white blood cells 7,250. Gastric analysis: Large amounts of blood from aspirated contents, and free HCl was 5-10-23-6-5 after histamine. Treatment: The patient was given a high caloric soft diet; brewers' yeast, liver extract parenterally. He did not improve, and died on May 17, 1936, nine days after admission.

Autopsy: Mucoid carcinoma of stomach with pyloric obstruction. Microscopic examination of tumor was adenocarcinoma of stomach.

Case 4. D. B., aged 47, a colored female, entered the hospital November 5, 1936 with diarrhea five or six times daily, with bloody mucus. There were pigmented areas on hands and butterfly distribution on nose. Present illness began June 19, 1936. Her diet consisted of milk, meat and vegetables, no indigestion or vomiting. She had pellagra in 1920, was advised as to diet and recovered. No signs of recurrence until present illness. The patient was in hospital in April, 1936, for hysterectomy for carcinoma of uterus. Examination: The patient was a poorly nourished female with typical pellagra lesions on hands and face, with generalized edema, dry red tongue. The chest was negative. Abdomen: Midline scar; no masses nor organs felt; fluid wave present. Laboratory: Kahn, negative. Urine, negative. Red blood cells 4,375,000; hemoglobin 90 per cent (after transfusion); NPN, 28; serum protein, 5.2; albumin, 1.4; globulin, 3.8. Gastric analysis, no HCl present. Treatment: She was given a blood transfusion, pellagra diet, liver extract parenterally, and brewers' yeast. The patient died on December 29, 1936, fifty-four days after admission. Autopsy refused.

Comment: This patient was given a blood transfusion due to edema and low serum protein with the reversal of the albumin-globulin ratio. For some time after the diet was instituted she improved but gradually grew weaker and died, most probably from metastasis of carcinoma of the uterus removed six months previously.

Case 5. C. C., aged 51, a white female, entered the hospital on February 27, 1936, with a complaint of stomach trouble and diarrhea. She had been operated on ten years previously at another hospital for stomach trouble; was told that part of stomach was removed, and since that time had not been able to eat heavy food. Diet consisted mostly of liquid. During the last few months had grown quite weak and developed a watery diarrhea, sore mouth and tongue. Examination revealed a poorly nourished white woman with pellagrous lesions on forearms and hands, tongue red and ulcerated. Examination of abdomen showed enlarged tortuous veins, liver and spleen not palpable, no fluid. A small, hard mass above and left of umbilicus was felt, not tender. Examination otherwise negative. Laboratory: Red blood cells 4,340,000; hemoglobin 90 per cent (after liver extract and iron). Treatment: She was given forced feedings with a tube: liver extract, dilute hydrochloric acid and pellagra diet, and was discharged on April 15, 1936, forty-seven days after admission, as markedly improved.

Comment: Roentgen ray examination not only re-

ported a gastroenterostomy but a palpable tumor in epigastrium with a long history of gastric disturbance which is very suggestive of a malignancy. Refused exploratory laparotomy. Pellagra symptoms abated promptly on forced feeding.

Case 6. A colored male, aged 35, began having diarrhea about five months previously, which had increased to 10 or 15 movements daily with blood and mucus present, associated with severe tenesmus. He had become very weak and had lost considerable weight. He developed a sore mouth and dark pigmented lesions on dorsum of both hands about three weeks previous. The history does not state if there had been any treatment instituted before entering the hospital. Examination revealed an emaciated, acutely ill man, with skin which showed pellagra dermatitis on both hands and forearm. Abdomen very tender to pressure and rigid; no organs palpable. Examination otherwise negative. The patient died shortly after admission. No laboratory data secured.

Autopsy: Amebic ulceration of the entire colon with a perforated ulcer of the lower ileum.

Comment: This patient died from the perforation of an amebic ulcer but three weeks previous developed the cutaneous lesions of pellagra which were due to the continuous diarrhea.

Case 7. W. M. T., a colored female, aged 24, began to have diarrhea with bloody stools in 1928. She was treated with diet and yeast, and improved rapidly. In 1930, she was delivered of a large child and diarrhea returned, began having bowel movements through vagina with incontinence. The patient entered the hospital June 6, 1935. Examination at that time showed an anemic, emaciated Negro woman, markedly demented; typical pigmentation on hands and legs; tongue atrophic. Examination otherwise negative except there was a recto-vaginal fistula. Laboratory: Red blood cells 3,000,000; hemoglobin 50 per cent; no gastric analysis was made due to mental condition. Treatment: A pellagra diet, brewers' yeast and liver extract parenterally were started. The patient grew progressively worse and died on June 28, 1935, twenty-two days after admission.

Autopsy: The skin around the anus is thick, nodular and inelastic. The lining of the anal canal is ulcerated, with the musculature of the sphincters being involved and exposed. The lining of the rectum is missing with a grayish, red, raw surface presenting. The wall is thick and edematous, particularly in the lower part of the rectum.

Comment: A diarrhea of five years' duration from an irritative recto-vaginal fistula in a person who has had pellagra previously is the primary factor in the cause of death in this case.

Case 8. B. K., a colored male, aged 65, entered

the hospital November 9, 1936, with a complaint of diarrhea 10 or 12 times daily. This condition began "years ago" with bloody stools and tenesmus. Food did not affect bowels. No indigestion or vomiting. Examination: The patient was a poorly nourished Negro male with typical pellagrous lesions on extremities and face. General examination negative. Roentgen ray of gastrointestinal tract reported as negative. Stool examination negative for ameba. Kahn, negative. Red blood cells 3,000,000; hemoglobin 60 per cent. Proctoscopic examination showed a medium sized polyp in lower rectum. Gastric analysis, no free HCl. Treatment: The polyp was removed and diarrhea immediately stopped. The patient was on normal hospital diet and discharged as markedly improved forty-four days after admission.

Comment: The polyp in lower rectum was evidently the cause of this man's diarrhea. Removal of polyp relieved symptoms and the patient improved immediately.

Case 9. E. H., colored female, aged 42, first came to the hospital in February, 1935, with fistulo in ano, stricture of rectum and pellagra of six years' duration. The fistula was excised and packed, stricture dilated, and patient put on pellagra diet. She had been treated for pellagra "off and on" for past six years. The diet had not been followed all of the time, but she ate eggs and milk most of the time. Took purgatives regularly to get bowel movement. She was admitted for the second time in August, 1936, for headaches, hallucinations, and pellagrous lesions on hands and forearms. Examination revealed an emaciated Negro woman, complaining of pain in rectum. Examination negative except for lesions on hands, perirectal abscess, and stricture of rectum. Treatment: On August 22, 1936 the abscess was incised and stricture dilated. She died on August 24, 1936, two days later.

Autopsy: The lower rectal wall is markedly thickened. The upper rectal wall and lower sigmoid also show considerable thickening. The perirectal area shows marked fibrosis and edema. There is a longitudinal rupture of the lower rectum, which measures 7 cm. in length, which is due to the breaking up of the stricture. About 10 inches of the bowels show ulceration. There is an acute peritonitis from contamination of the perforation.

Comment: The immediate cause of death was peritonitis, due to rupture of the lower bowel while dilating stricture, but the amount of ulceration and proctitis present is evidence enough of lymphogranuloma inguinale being present.

Case 10. C. T., aged 27, colored female, entered the hospital with complaint of loss of appetite,

nausea, weakness and diarrhea. Three weeks before she had noticed dark pigmented lesions on both hands; one week later, mouth became very sore. She denied any venereal lesion.

Examination: The patient was a poorly nourished, emaciated, acutely ill Negro woman with a red and ulcerated tongue. Examination otherwise was negative. Laboratory: Secondary anemia. Gastric analysis, no free HCl. Frei test, strongly positive. Treatment: A pellagra diet and brewers' yeast were started but she showed no improvement and died fourteen days after admission.

Autopsy: The cause of death was reported as pellagra with ulcerative proctitis due to virus of lymphogranuloma inguinale.

Case 11. M. R. a colored female, aged 32, was first admitted on May 19, 1934, with a complaint of abdominal distress of three weeks' duration and stricture of rectum. She had been in the hospital several times previous for dilation of stricture, each time giving relief of symptoms. On the second admission she complained of loss of appetite and weight of three weeks' duration, dementia one month's duration. Examination: The tongue was red and injected. Genitals: purulent vaginal discharge, with a stricture of the rectum that would not admit index finger. Laboratory: Red blood cells 2,270,000; hemoglobin 46 per cent; Frei test was strongly positive. Treatment: She was given a pellagra diet with brewers' yeast. The stricture was dilated; she showed little improvement and died on February 28, 1935.

Autopsy: Pellagra, ulcerative proctitis from virus of lymphogranuloma inguinale.

Comment: Due to patient's mental condition it was impossible to give regular feedings and she showed no signs of improvement, dying fourteen days after admission.

Case 12. E. A., a colored female, aged 27, entered the hospital July 18, 1936, for pellagra and diarrhea. She had had pellagra with loose stools for over a year, frequently had incontinence and had lost 30 pounds in the last year. Examination: Essentially negative except a rectal stricture and perirectal abscesses. Laboratory: Red blood cells 3,000,000; hemoglobin 50 per cent; Frei test positive. Treatment: A pellagra diet, brewers' yeast, and liver extract parenterally were given. She died on July 28, 1936, ten days after admission.

Autopsy: There is a marked perirectal edema and rectal wall throughout tremendously thickened, measuring up to a centimeter in thickness. Its lining is a grayish red color, pitted, nodular, and trabeculated. The anal canal shows the same pathology.

Case 13. F. T., a colored female, aged 26, was discharged from the hospital January 1, 1935 with a diagnosis of lymphogranuloma inguinale and returned February 14, 1935 in delirium. Examination revealed an emaciated Negro woman running a septic temperature with typical pellagra lesions on hands, complaining of diarrhea eight or ten times daily. Examination was essentially negative except a muco-purulent discharge from vagina and rectum. Treatment consisted of pellagra diet, liver extract parenterally. She showed no improvement; died two days later.

Autopsy: Pellagra, ulcerative proctitis, vaginitis and vulvitis from virus of lymphogranuloma inguinale.

Case 14. F. H. a colored female, aged 42, entered the hospital complaining of diarrhea, vomiting and pain in rectum. She had been vomiting off and on for about one year, unable to eat heavy food. Unable to get a bowel movement unless the contents were soft and then had to take enemas and purgatives. About a week before she began having diarrhea three to seven times daily, and noticed lesions on hands. Examination: The patient was undernourished with a marked cystocele, lacerated cervix, stricture of the rectum, unable to pass index finger, otherwise negative.

Laboratory: Kahn, negative, Frei test strongly positive. Secondary anemia. No gastric analysis made. Treatment: The stricture was dilated and the patient put on pellagra diet. She showed marked improvement.

Comment: This patient, due to stricture of rectum, was not on a balanced diet and had to resort to daily purgatives to get bowel movements, which prevented absorption of food and pellagra resulted.

CONCLUSION

Pellagra secondary to lesions of the gastrointestinal tract occurs more frequently than is suspected and those who do not respond to a proper diet in a short time or those who give a history of having been on normal diet and develop signs and symptoms of pellagra, should be examined for some lesion of the gastrointestinal tract as a causative factor.

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DISCUSSION

Dr. D. N. Silverman (New Orleans): We appreciate Dr. Scott's bringing to our attention again the relationship of gastrointestinal lesions to the development of pellagra. There is doubt in his mind and in our minds, since we do not know the etiology of pellagra, just what bearing these different organic lesions of the gastrointestinal tract bear to the development of pellagra. It has not been definitely proved that pellagra is not an infection, as shown by Harris several years ago in his transmission of the disease to the monkey.

I think in the case of the polyp of the rectum, I will have to disagree with Dr. Scott. I believe he brought that old Negro into town and gave him something to eat he had not had before, and that in his 54 days of residence in Charity Hospital, where I am sure the food is good, he got well.

We are always inclined to think of pellagra as one of the deficiency disorders closely allied to sprue and pernicious anemia. Guthrie, at Tulane, several years ago brought out the fact that many pellagrins, like we find in pernicious anemia, very often have an absence of hydrochloric acid in the stomach and, not infrequently, a deficiency of hydrochloric acid in the stomach. Sometimes it is difficult to tell which came first, the deficiency of diet in the patient or the lesions in the gastrointestinal tract, not localized, however, like those so lucidly brought out by Dr. Scott; I mean the tongue pictures that we see, the beefy, red tongue, and diffuse hyperemia, and infection of the entire digestive tract. In fact, there may be such lesions and nervous system lesions without any dermatitis.

So as not to overlook the cases of pellagra, the sinusoid dermatitis, we must think of such cases. Instances of carcinoma of the gastrointestinal tract, with subsequent development of pellagra, must always be kept in mind. Sometimes patients are seen who have had carcinoma as remote from the gastrointestinal tract as the uterus, and after irradiation the patient is still going down, developing diarrhea and sore mouth. We take it for granted that those particular subsequent symptoms are due to metastatic lesions, whereas they are not. As Dr. Scott pointed out, they are due to a deficiency disorder, and the injection of liver as

well as the administration of vitamins by mouth have given very excellent results, some of those patients not dying of carcinoma.

Dr. W. R. Mathews (Shreveport): Any lesion of the gastrointestinal tract which prevents food materials reaching the absorptive area or accelerates their elimination may be a factor in the causation of pellagra. Dr. Scott has reported examples of organic lesions causing both obstruction and diarrhea. The clinical recognition of these in pellagrins whose economic status suggests primary dietary deficiency is often not made. This appears to be particularly true in patients with ulcerative or stenosing lesions of the rectum or colon in which the main symptom, diarrhea, is likely to be interpreted as due to primary pellagra. My observations at the Shreveport Charity Hospital have given me the impression that rectal lesions caused by the virus of lymphopathia venereum are of considerable importance in the causation of secondary pellagra as well as a serious obstacle to therapeutic results in this disease.

Dr. Isadore Brickman (Alexandria): I did not come here especially to make any remarks about this particular condition, because my work is in an institution for the mentally defective and epileptics in Alexandria. During my connection with this institution during the past seven years, I have seen such secondary pellagra, as Dr. Scott referred to in his paper, following amebic dysentery. We have had about 20 or 30 cases of amebic dysentery, some proved so microscopically. Some of these cases developed lesions, which I diagnosed as pellagra. However, not having found any literature on the subject, I thought perhaps they were manifestations of amebic dysentery, which was very doubtful.

One patient we had, who had a very marked prolapsed rectum due to amebic dysentery, had to be operated on, which was followed by various therapeutic material, such as anayodin and carbosone. My personal experience was that after the lesions of amebic dysentery disappeared, we were able to overcome the pellagra. I do not know the exact percentage of our cases, but quite a number of them died from the toxic effects of both the amebic dysentery and the pellagra.

I used liver extract and brewers' yeast, attempting to give them the proper vitamins. So it is my personal opinion, as Dr. Silverman, Dr. Scott and Dr. Mathews suggested, that it is failure of assimilation of proper foods in the intestinal tract rather than the lack of proper foods, because we attempted to give proper diet to this patient, plus meats, liver extract, and also brewers' yeast, without cessation of the pellagra lesions. However, on treating these specific conditions, we improved their pellagra.

In another series of cases that was interesting to me, I found cases of Vincent's angina of the mouth, which is rather common in institutions, due to the fact that we have to deal with low grade idiots and imbeciles who are very difficult to feed and whose teeth and mouths are difficult to keep clean. I found these cases were also subject to development of secondary pellagra following Vincent's infections of the mouth.

Dr. Daniel W. Kelly (Oak Grove): I do not believe the cause for pellagra has been found. I have been treating pellagra for very nearly thirty years, and I have seen pellagra cases follow each other in homes, and in women who have nursed patients. I believe the death rate of 31 per cent in pellagra could be reduced by medical treatment.

I think if these patients who go to Charity Hospital are given cold baths, hydrobromide of quinine and increasing small doses of arsenic, not the large dose of arsenic recommended 20 or 25 years ago, and are well fed, they will improve. I think there is a great deal in the diet.

Dr. W. M. Scott (In closing): When I questioned this Negro, he had been on a normal diet as to milk, meat, vegetables, and all necessary foods.

As to Dr. Kelly's question, the mortality of thirty-one per cent is very high, but mild pellagrins are not admitted to Charity Hospital and most of them die soon after entering. I also agree with him that we do not know the cause of pellagra, but the possibility of an intrinsic factor deficiency must be kept in mind until disproved.

NON-TUBERCULOUS LUNG ABSCESS*

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NEW ORLEANS

Thoracic surgery has advanced tremendously in the past twenty years but the results of the treatment of lung abscess have shown little or no improvement. Isolated reports of excellent results achieved by certain special methods of treatment appear from time to time but the collected series of unselected cases from large general hospitals such as the Henry Ford, the Peter Bent Brigham and the Massachusetts

General hospitals show no significant reduction of mortality. Allen and Blackman have collected from the literature, 2,114 cases with a general mortality of 34.3 per cent.

Hoping that we might contribute something toward the improvement of this state of affairs, we have undertaken a critical analysis of a consecutive series of cases with special reference to the causes of unsatisfactory results. Our material consists of all the cases of lung abscess treated at Touro Infirmary from 1926 to 1936 inclusive, with the exception of those due to tuberculosis, bronchiectasis, carcinoma and the aspiration of foreign bodies. There were 60 cases in all, with end results available in 52. The period of observation after discharge averaged 59 months in the surviving cases. Only one was followed less than one year and two less than two years. The case observed less than one year was entirely cured both clinically and radiologically. All cases classed as having satisfactory results have been examined within the past three months. Twenty patients, 33.3 per cent, died in the hospital, and four died after discharge, giving a total mortality of 40 per cent; 27 cases, 45 per cent, had satisfactory results; six cases, 10 per cent, are probably cured but not followed, and three, 5 per cent, were failures.

INCIDENCE

All of these patients were white; 40 were males and 20 females. The age in the 58 cases in which it was stated ranged from six months to 68 years, the average being 33.7 years. It has frequently been stated that age plays an important part in determining the end result, but there was no preponderance of the extremes of age in our fatal group and the average age of the cured cases was 33 years, as compared to 34 years in the fatal ones.

ETIOLOGY

In 18 cases the abscess followed operation or infections about the nose, mouth or throat; five followed operations in other locations. The remaining 37 followed various respiratory infections such as pneumonia or influenza or were apparently primary. The origin of the infection seemed to have little or no effect on the course and result of the disease.

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

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TABLE I
OPERATIONS AND INFECTIONS ABOUT NOSE,
MOUTH AND THROAT

Tonsillectomy	13
Other conditions	5
Other operations	5
Pneumonia, influenza or primary	37
Total	60

LOCATION

In 53 cases the involvement was unilateral, 29 on the right and 24 on the left. In six of these more than one lobe was affected, four on the right and two on the left. In seven cases both lungs were involved. The mortality in those cases with bilateral involvement, was 88 per cent, in those with unilateral multiple lobe involvement, 67 per cent, and in those with single lobe involvement only 29 per cent. In spite of the small group of cases we feel that this is a striking and significant observation.

PATHOLOGY

We shall not attempt a discussion of the pathology of lung abscess but would like to remind you that every such lesion is first a pneumonitis, then a gangrene, and finally, with liquefaction of the gangrenous area, an abscess. When the disease is first recognizable, pneumonitis, gangrene and abscess usually co-exist.

DIAGNOSIS

Diagnosis, likewise, cannot be fully considered but the importance of roentgen ray must be emphasized. A presumptive diagnosis can be made without it, but a positive one cannot. Furthermore, radiographs should be taken in at least three planes, for accurate determination of the location, extent and character of the lesion is necessary for intelligent treatment. Fluoroscopic examination is insufficient. In two cases in this series large abscesses were completely overlooked when only this method was employed and in each a fatal outcome was, at least partially, due to this error.

DURATION BEFORE TREATMENT

Many observers have stated, and it seems reasonable to believe, that results would be better if these patients came to treatment earlier, but curiously enough our figures do not support this belief. The average duration of symptoms before treatment, in this entire group, was 39.3 weeks. The average for the non-operative

group, in which the mortality was 46 per cent, was 29 weeks, whereas for the operative group, in which the mortality was only 29 per cent, it was twice as long, 60.8 weeks. The average duration for those cases which had satisfactory results was 28.3 weeks for the non-operative, and 28.8 weeks for the operative. On the other hand, in the unsatisfactory group the duration was only 7.4 weeks for the non-operative and 16.3 for the operative cases. The average for the fatal cases was somewhat longer, 35.8 weeks for the non-operative and 147.4 weeks for the operative. The startling contrast in this last group is to a large extent due to the fact that two cases of 12 and 10 years' duration are included. If these two be omitted, the respective durations become 7.3 weeks for the non-operative cases, and 28.3 weeks for the operative cases. These figures correspond very well with those of the other groups. It is not unfair to omit these two cases, for one patient who was treated conservatively was discharged from the hospital almost cured, his abscess cavity very small and barely visible by roentgen ray, no bronchiectasis present, and his general health excellent. He was lost sight of by his physicians and died two years later, possibly from a recurrence. The other, a surgical case, died, but autopsy revealed that he died of causes not due to the long duration of the abscess.

In addition to this evidence we find that except for bronchiectasis which developed in three cases and unilateral fibrosis which developed in another, clinical, radiologic and autopsy findings fail to show that long duration of a lung abscess produces local or constitutional damage incompatible with a satisfactory degree of recovery. Some of the oldest cases in our series, including one of 10 years' duration, showed neither bronchiectasis nor extensive scarring by roentgen ray at the conclusion of hospital treatment. In particular we find that the dense rind of the abscess, usually described as being fibrous, melts away so completely under treatment that we are convinced that it is not fibrous but exudative.

We are forced to the conclusion that in this series there is no evidence that prolonged dura-

TABLE II
DURATION IN WEEKS BEFORE TREATMENT

	Non-operative group	Operative group	Combined group
Satisfactory results	28.3	28.8	28.5
Unsatisfactory results	7.4	16.3	10.8
	(35.8)	(147.4)	(60.)*
Deaths	7.3	28.3	11.3
	(29.)	(60.8)	(39.3)
Average	15.1	26.5	18.8

*Figures in parentheses include the two cases with extremely prolonged course, as described in text.

tion of an abscess of the lung militates seriously against its cure.

RESULTS OF TREATMENT

Thirty-nine of the 60 cases (65 per cent) were treated by conservative measures, and 21 (35 per cent) by surgical methods. The mortality of the conservative group was 46 per cent and of the operative group, 29 per cent; 27 cases (45 per cent) had satisfactory results, 15 (38 per cent) of the non-surgical cases, and 12 (57 per cent) of the surgical cases. This appears to show a distinct advantage for surgical treatment but requires qualification. Six additional cases are believed to have had satisfactory results, but have not been followed. Four of these had non-operative treatment and two operative. Three cases were rated as failures, two non-operative and one operative. Eight of the conservatively treated patients, and one treated surgically died so promptly, with such overwhelming sepsis, that, in our opinion, they were not amenable to any form of treatment.

If these nine cases be eliminated, corrected figures show 51 cases amenable to treatment, of which 31 were treated conservatively with a mortality of 10 (32 per cent), and 20 treated radically with a mortality of five (25 per cent). If we add that four of the conservatively treated group left the hospital definitely improved and died later presumably because treatment was discontinued before cure was attained, and that six of the surgical group were operated on not for the abscess but for com-

plications that already existed when they were first seen, it becomes clear that the result in a given case depends more on the thoroughness of application of the treatment than on the type and more on the pathology than on either.

The one outstanding fact about treatment is that it must never be discontinued before the abscess is completely healed.

SPECIAL METHODS OF TREATMENT

The methods of treatment used include postural drainage, bronchoscopy, intravenous neosalvarsan, and surgical drainage. Bronchoscopy was used in 19 of the 60 cases. It appeared to be of definite value, but cannot be considered an adequate method when used alone. It can and does remove obstructions from the bronchi, dilate constricted passages, clear the bronchial tubes of thick exudate, and induce forcible coughing. This last is a very valuable factor in emptying the abscess, but is not without danger, as one case of subsequent drowning attests. Bronchoscopy cannot be used more than three times a week at the best, and such infrequent emptying will not cure an abscess of the lung any more often than it will similar lesions elsewhere.

Postural drainage was mentioned in only 15 histories and in four of these it was inadequately applied. This is a most valuable measure, too seldom properly applied. The patient should spend the majority of every day in that position which gives the best dependent drainage of his abscess, compatible with a reasonable degree of comfort. In addition, he should,

as often as his strength will permit, assume the most favorable possible position and cough forcibly until the abscess is evacuated. This method requires intelligent cooperation between doctor and patient.

Neoarsphenamine was used in 14 cases but we were disappointed to observe that it seemed to cause improvement in only one.

Twenty-one cases were operated upon and in only 15 of these was the abscess directly attacked. The remainder had drainage of spontaneous or induced empyema. In only six was the abscess adequately drained and it is noteworthy that all of these were cured. In 9 the drainage was incomplete due to the presence or subsequent development of additional abscesses or to other causes; four of these were cured, two had unsatisfactory results, and three died. Adequate drainage was attained only in single superficial lesions and when drainage was not adequate the clinical course did not usually indicate that substantial improvement followed the operation.

ANALYSIS BY RESULT

Analysis of these cases from a standpoint of the results produces some illuminating facts. A satisfactory result is one in which the patient is restored to health and the abscess cavity disappears leaving a minimal scar in the lung. We have had to be content in some cases with a report of a clinical cure of long standing.

Of the 15 cases reported cured by conservative treatment, only nine had what we would consider adequate treatment and four had none at all, other than supportive measures. Probably many lung abscesses get well unrecognized and untreated.

On the other hand, of the 12 cases reported cured by surgical measures, all but one had adequate treatment, though in some instance this did not include drainage of the abscess.

Of the six cases not well when last heard from (not recently reported) and the three classed as failures, only two had adequate treatment, one by surgical and one by medical methods.

DEATHS

Twenty-four patients died, of whom 11 were autopsied. Eighteen had been treated conservatively; 11 of these had had adequate treatment

and seven had not. Six had been treated surgically but in only one of these do we consider that the treatment was adequate.

Of the 11 patients who had adequate conservative treatment, eight died of overwhelming infections which we do not believe were amenable to any form of treatment; six of these had extensive pneumonitis and multiple abscesses involving both lungs. Every patient so affected died. The other two died so promptly of overwhelming infection that there was no time for treatment. One died of drowning from sudden emptying of the abscess into a bronchus following bronchoscopy, an unusual accident, not to be anticipated. One died without evident cause and autopsy was refused. One died two years after discharge, probably as a result of recurrence of the abscess which was not entirely healed when he left the hospital. He was lost sight of and the cause of death was not definitely known.

Seven of the non-operative group were inadequately treated. Two were moribund from presumably spontaneous pyopneumothorax on admission. Apparently they were untreated before admission because of error in diagnosis. One was of two months' duration and the other about 18 month. Three patients discontinued treatment against the advice of their physicians. One of these died of drowning from sudden, spontaneous emptying of the abscess into the bronchus during a bout of coughing. One died of spontaneous pyopneumothorax, and one from unknown causes. One other patient who discontinued treatment too early died of operation for bronchiectasis which resulted from the abscess. The other patient died of a combination of sepsis from the abscess and shock from an operation in another area which was undertaken due to an error in diagnosis resulting from too great dependence upon fluoroscopic examination. In short, all of these seven patients died as a result of inadequate or mistaken treatment.

Six patients died under surgical treatment. In only one of these patients was the treatment adequate and he died as a result of general sepsis in which the lung abscess was only an incident. Of the remaining five, two died as a result of the use of the exploring needle, one having developed a pyopneumothorax from this

cause before admission; one, on whom artificial pneumothorax was attempted, died of a combination of pyopneumothorax and drowning due to sudden emptying of the abscess into a bronchus. One had unsuccessful surgical drainage of an abscess and in addition developed an empyema and septicemia. This empyema, it should be noted, developed in spite of the fact that a two-stage operation of the most approved type was performed. Another patient had adequate drainage of one abscess, but developed two more immediately after operation and ultimately died with miliary tuberculosis which was found only at autopsy. The pathologist pronounced the abscesses themselves non-tuberculous. It is noteworthy, we think, that roentgen rays taken after operative intervention in this series invariably showed extension of the pneumonitis with or without additional abscess cavities. The last patient died of an operative procedure, thoracoplasty, chosen because the radiologist had pronounced the 12 year old lesion fibrosis following an abscess, when it was really a large abscess cavity filled with pus. This error was a result of dependence upon fluoroscopy alone. It is probable that a large dose of amytal contributed materially to the fatal issue.

To summarize the causes of death, we consider that 10 of the 24 were not preventable. Of the remainder, one was an unpredictable accident following rational therapy; five were due to premature cessation of treatment that was evidently progressing toward cure; two died of ill chosen treatment as a result of inadequate roentgen ray study; two died of delay in receiving treatment; two were due to needling of the chest; two were the result of ineffective surgical drainage.

Other facts of interest emerge from this analysis. Three patients died of drowning, which indicates that any sudden compression of the lung, whether by forcible coughing, artificial pneumothorax, or surgical measures, is extremely dangerous if the abscess cavity is full of pus.

Six patients died of pyopneumothorax; in four it was spontaneous. These abscesses must have been superficial and early surgical drainage might have prevented a fatal issue. In two it was due to use of the exploring needle,

a procedure which cannot be too severely condemned. It was employed five times in this series and pyopneumothorax resulted in three instances.

PLAN OF TREATMENT

It seems to us that if there is an outstanding defect in the method of management of lung abscesses it lies in the fact that each physician is inclined to continue a plan of treatment, whether or not the particular case is suited for it. We submit, therefore, what we believe to be a proper plan of management utilizing all methods, according to their indications:

(1). Those patients who present themselves with a fulminating pneumonitis should be treated as pneumonia cases until the acute inflammatory process subsides, leaving the lung abscess itself as the predominant factor. In these patients the cause of the severe, acute symptoms is the pneumonia and, even if the abscess is successfully drained, no immediate improvement in the patient's condition can be expected. They are too ill for major surgical operation, and even postural and bronchoscopic drainage may be too great a strain upon them. Any active method of drainage, whether postural, bronchoscopic or surgical, is likely to cause a spread of a pneumonitis as was demonstrated in several of the cases in this series. Some of these patients will die of the pneumonia, but we submit that they are less likely to do so if they are not called upon to endure major operations or other burdens in addition to the pneumonitis, which is unlikely to be benefited by them. Neosalvarsan may be given in small doses if spirilla are found in the sputum, but our own observations do not lead us to expect much improvement as a result.

(2). If the abscess dominates the picture when the patient is first seen, or after this state has developed under treatment, the abscess itself becomes the chief concern to us, never forgetting that supportive treatment must continue throughout the management of the case. At this stage the primary object of all treatment is to drain the abscess cavity because if this be accomplished the surrounding pneumonitis will subside, the rind of thick exudate will be liquefied and expelled, and contraction of the abscess wall and expansion of the surround-

ing lung will bring about obliteration and healing of the cavity. While compression therapy may hasten this process it should be remembered that contraction will take place spontaneously in a reasonable period of time, and without the risk of additional operative interference. We must never make the mistake of employing compression therapy for the purpose of draining the abscess.

Conservative treatment consisting of postural and bronchoscopic drainage should be tried first, probably in all cases, and no fixed time limit can be set for the trial. If the cavity can be kept empty and progressive improvement in the local and constitutional condition of the patient continues, this method may be followed until cure results. If, on the other hand, the cavity cannot be kept empty or if satisfactory and progressive improvement does not take place, surgical methods should be considered. The greatest dangers under this régime, in addition to those of continued sepsis, appear to be spontaneous pyopneumothorax, if the lesion is superficial, and drowning, if it is deeply situated.

The time limit for unsuccessful conservative treatment has been set from no delay (Neuhof) to 12 weeks (Graham). We do not believe that a definite time limit can be set.

If the cavity is adequately drained but does not collapse satisfactorily some method of compression therapy must be resorted to. This series, however, presents not a single such instance although such cases undoubtedly do occur. If artificial pneumothorax is feasible it is the simplest method of compression therapy, but it is also the most dangerous and we believe it should be abandoned. Regional extrapleural compression is probably best when it can be applied, preferably by the method described by Overholt or by plombage which is so highly recommended by some European observers. We have no experience with the latter method. Thoracoplasty, the type being adapted to the size and location of the abscess, is the next choice, and as a last resort, lobectomy. Paralysis of the phrenic nerve was used only in one of these cases, but has been more extensively used elsewhere with some satisfactory results. It produces comparatively lit-

tle effect but has the advantage of being quite safe.

We submit the following plan for selecting the method of treatment based on the location of the cavity, which must be accurately determined by radiographs in at least three planes: Abscesses in the periphery of the lung, the outer zone in which both bronchi and blood vessels are small, are likely to communicate with a small bronchus and therefore drain poorly and are also likely to rupture into the pleura. Furthermore, they are readily accessible to incision. The pleura is usually adherent over them, making a one-stage incision possible. There is little normal lung tissue overlying them so the dangers of pneumonitis and hemorrhage as a result of incision are minimal. The danger of pneumothorax is prohibitive. All factors in this group should lead us to select external drainage if prompt and continued improvement does not occur under conservative management. If compression therapy is required in this group, regional methods, including phrenic paralysis, if the lesion is at the base, are likely to be effective. Bronchoscopy is comparatively valueless because of the small size and great length of the tributary bronchus.

If the cavity is deeply situated in the lung it is likely to communicate with a large bronchus and most unlikely to rupture into the pleural cavity. It is not readily accessible to incision and since the pleura is not likely to be firmly adherent over the abscess, two-stage operations are usually necessary. A large amount of normal lung tissue overlies the cavity so the dangers of pneumonitis and hemorrhage are great. The danger of pneumothorax in this group is minimal but the comparative rigidity of the hilar region lessens its effectiveness. Bronchoscopy is likely to be very useful because of the large, short bronchial communication. All factors in this group should incline us towards conservative measures and these should be continued for a comparatively long time before being abandoned. Compression therapy may, in some locations, such as the upper lobes, be effected by regional measures, but in the more centrally located cavities thoracoplasty may be required.

CONCLUSIONS

1. Thorough radiographic examination is essential for both diagnosis and treatment of lung abscess.

2. In this series of cases prolonged duration of the lesion did not materially increase the mortality or prevent complete restoration of health.

3. Bronchoscopy is a valuable part of conservative treatment but not a satisfactory method in itself.

4. Postural drainage is the most valuable of all conservative measures if properly applied.

5. Surgical drainage, to be effective, must drain the cavity completely and in this series this was accomplished only in superficially situated lesions.

6. Treatment should never be discontinued until complete healing of the cavity has taken place.

7. The use of the exploring needle is both useless and dangerous and the same is usually true of artificial pneumothorax.

8. Any procedure that produces compression of a cavity not already empty is hazardous.

9. The ultimate result in a case of lung abscess depends less on the choice of method of treatment than on the thoroughness of its application and less on either than on the extent and severity of the lesion.

10. A systematic plan of management of lung abscesses, employing all useful methods as indicated, is proposed.

DISCUSSION

Dr. D. R. Womack (New Orleans): So far there has been very little agreement on the treatment of non-tuberculous lung abscess, and each individual has followed whatever bent he has felt inclined to. In cases where the outcome has been favorable the attending physician has become an ardent supporter of that method. It is only by studying an entire group of cases, such as Dr. Rives has done, that the best opinion can be formed of any method.

The value of the bronchoscope in the diagnosis and treatment of lung abscess is unquestioned. First, to differentiate the exact type of abscess, the bronchoscope is used for biopsy and study of aspirated secretions. Next, to localize the lesion more definitely than the roentgen ray, we rely upon the findings of the bronchoscope. Secre-

tions can be visualized and the location of the abscess determined from the spot the pus is encountered. Finally, the use of the bronchoscope in draining the cavity is invaluable. It is a moot question as to the *modus operandi* of bronchoscopic drainage of an abscess cavity. Some observers consider that it is the actual aspiration of the abscess cavity that is beneficial, and others say it is the subsequent paroxysms of coughing that are accountable for the amelioration of symptoms; be that as it may, bronchoscopy usually helps the central abscess or those that connect with the bronchial tree to the extent of discharging therein.

Small doses of intravenous arsphenamine are to avoid loss of lung tissue through spirochetal infection rather than to heal the abscess lesion, and, as such, we would not see any striking benefit following its use.

Exploratory puncture is contraindicated. If the abscess is superficial this method of drainage is not satisfactory and if the abscess is deep the puncture is followed by such spread of the disease as usually to be fatal.

In studying the authors' cases some astounding facts are encountered, one case of upper lobe abscess had the foot of the bed elevated for a period of weeks. Repeated bronchoscopy for the central draining abscesses and adequate surgical intervention for the peripheral abscess would seem to provide the best method of treatment. As the doctor who just spoke had an abscess himself and got well through expectant measures, he advocates this method. Still, I believe if a series of non-tuberculous lung abscess cases are reviewed, such as these reported by Dr. Rives, the picture assumes a little different aspect.

Dr. Robert C. Major (New Orleans): It was stated that of the 60 cases reported, the abscess, or abscesses, followed operation or infection about the nose, mouth and throat, in 18; followed operations in other locations in five; and followed upper respiratory infections or were primary in 37. The exceedingly high mortality in multiple abscesses involving more than one lobe of one or both lungs was pointed out. Also it was stated that the origin of the infection seemed to have little or no effect upon the course and outcome of the abscesses. This last statement is true when the postoperative group is compared with the group not following an operation.

I wish to add one observation: Of the operations or infections which led to the formation of abscess in 18 cases, 13 were tonsillectomies; two were tooth extractions; one, an operation for pansinusitis; one, compound fracture of the mandible, and one a spontaneous rupture of a peritonsillar abscess.

Now, when we consider single abscesses separately, we find that the single abscesses following operations or infections about the nose, mouth, or throat, were accompanied by a mortality of only one in 12, or 8.3 per cent, as compared with a mortality of three out of five, or 60 per cent, accompanying operations in locations other than about the nose, mouth and throat, and 10 of 30, or 33.3 per cent, in the cases associated with upper respiratory infections or apparently primary. We do not know how significant this observation is, but it is interesting, and it is at variance with some reports.

Dr. Gilbert C. Anderson (New Orleans): I merely want to sound one word of warning in connection with lung abscesses and that is the frequent occurrence of brain abscesses as a complication. I suggest that brain abscesses become a serious consideration in all cases which are apparently not doing as well as the medical attendant thinks they should. We know well that there is a definite association of pathology between the thoracic and the cranial cavities and that refers not only to abscesses of the lung but to empyema, pneumonia and other septic conditions as well as neoplastic growths. Some of these metastatic brain abscesses which are primarily in the thoracic region are multiple which, of course, gives a bad prognosis.

Please let me leave one thought in your mind and that is, think of brain abscesses in connection with lung abscesses.

Dr. F. H. Walke (Shreveport): I could not let this opportunity go by without saying a few words on lung abscess, being a victim myself, and knowing whereof I speak.

It seems strange that the treatment in one part of the country is so different from that in others. The doctor speaks about surgical drainage; I know that of 29 patients surgically drained, all died; those who had pneumothorax and the lung was compressed, got well. So if you attack pneumothorax, I hasten to its defense; I happen to have been a victim, and I have had roentgen rays taken since 1931, without any present evidence of the abscess. The lesion happened to be in the upper right part of the lung which is more amenable to pneumothorax.

I reviewed the histories of some 159 patients, some of whom died, some got well, and from the roentgen ray and autopsy findings of these two hospitals to which I had access, I came to the conclusion that pneumothorax gave a higher percentage of cures than surgical drainage.

Dr. J. D. Rives (In conclusion): We have reported these results and drawn our conclusions from them without any regard to our own preconceived opinions or anyone else's and in some

instances the conclusions that must follow are not in agreement with our own opinions or those of others we have read.

We have concluded that pneumothorax is exceedingly dangerous. If there are adhesions on the surface of the lung, they may be torn by the collapse, with resulting rupture of the abscess into the pleural cavity. Our failure to stress the importance of bronchoscopy was due not to lack of appreciation, but due to the fact that we did not have the time to give it the discussion which was its due.

I am very glad Dr. Anderson brought up the matter of brain abscess. As we stated, we did not allow our observations to be colored by anyone else's. It is generally reported, and in sufficient cases to make the statement strong, that 10 per cent of lung abscesses die of brain abscess; therefore, the danger is very great. The fact is in this series there was no case of brain abscess, consequently we did not devote the time to that subject that it warranted. One case might have been brain abscess, in which the patient died from an unexplained cause following a surgical procedure. There might have been some other cases not discovered that had brain abscess. We in every instance felt we found in the record sufficient cause for death.

PLASTIC SURGERY AS ALLIED WITH THE TREATMENT OF CANCER*

NEAL OWENS, M. D.†
NEW ORLEANS

Permanent cure associated with minimal disfigurement and dysfunction should be the ultimate aim of all treatment for cancer. There are three accepted methods of treatment of this disease: radiation, by radium or roentgen ray, and surgical excision. Some cases are sufficiently far advanced, however, to require a combination of two or even all three of the above mentioned methods. Provided growths are accessible and there are no contraindications to the use of any of the accepted procedures for the treatment of cancer, probably any one of the methods of choice could be used successfully in a given case. The keynote of any method

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of treatment for cancer should be adequacy. Inadequacy in some phase of treatment accounts for a considerable part of the mortality from this disease. It has been assumed that failure in obtaining a permanent cure in many advanced cases of cancer was due to neglect on the part of patients in presenting themselves for treatment, but pertinent facts taken from personal histories obtained from many of these patients do not show this to be true. On the contrary, a surprisingly large number of patients with advanced cancer, many with hopeless metastases, give a history of having submitted themselves to the profession for treatment at a stage when the growths were early and when complete eradication with cure could and should have been accomplished. Further history from these cases usually reveals that no rational treatment had been given; instead, a haphazard course usually followed with the expected result of advanced cancer with metastases.

CANCEROUS LESIONS

Plastic surgery can be an aid to patients with precancerous lesions or early skin cancer. Many elderly patients with the above lesions who have lived out-of-doors and lead lives of exposure can be helped by simple instruction on the proper care of their skin. Most of these lesions are seen as areas of pigmentation, hyperkeratoses, and small discrete elevations on the surface of the skin where there has been an increased proliferation of the epithelial cells. Many of these areas can be held dormant by scrupulous cleanliness of the skin in conjunction with daily applications of cold cream. The daily application of a bland cream serves to keep the part soft and pliable and prevents dryness and encrustation. If simple palliative methods fail to check the advance of these precancerous lesions and particularly if there is a tendency toward increased growth, it is advisable to insist on active treatment by one of the accepted methods. If surgery is elected, usually complete excision, allowing ample lateral margins, with closure of the defect borders by direct approximation, is sufficient. Too many patients, after an assumed cure following radical extirpation, present themselves for repair of large defects by procedures in plastic surgery. A large number of these cases if properly treated in the early stages, and practi-

cally all of these early lesions are plainly visible and easily recognizable as abnormal growths by all who view them, could have been completely eradicated by a minimal amount of treatment, suffering, and disfigurement if properly treated in the early stage. There should be more glory for the physician, who, in his alertness, recognizes an early malignant growth and eradicates it with a minimal amount of disfigurement and disability than for a physician who satisfactorily extirpates an advanced cancer which he has observed from an early stage, even though the defect is satisfactorily repaired.

As the rationale of the treatment of cancer by radium and roentgen ray is assumed and since procedures in plastic surgery are required only in those cases in which surgical extirpation is indicated or in which reconstruction of defects is necessary, and as most defects are surface defects or related to surface defects, this paper will concern only those cases requiring extirpation by surgery and repair of defects resulting from skin cancer or surface defects resulting from cancer of the head and neck. Precancerous and early cancer lesions of the basal cell or the small localized squamous cell type should be extirpated by an incision which gives an adequate lateral margin as well as ample depth, for these growths frequently extend much farther than clinical appearance would suggest. Ewing states that basal cell carcinomata . . . "spread through the dermal lymphatics by proliferation and forming long cords within the lymphatic channels. When the surgeon comes along and decides to do a very radical operation, to cut out these tumors, he is very apt to leave some cells which give rise to recurrence, and since these tumors are on the face or around the eye, a very radical resection without regard to location would give an unsightly result." Even more care in the election of lateral margins and depth of tissue to be excised should be taken in cases with squamous cell carcinoma, and, if a given growth is known to be squamous cell, not only should the lateral margins of the tissue removed be exceptionally wide but also of sufficient depth to remove the underlying fascia. Due consideration should be given to regional lymphatics in all cases of squamous cell carci-

noma, and, if proof of metastasis is established, then some accepted type of therapy, either radiation or complete surgical excision, should be carried out. All surgical excision for skin cancer should be done with the aid of the frozen section technic for preparing biopsy specimens for microscopic study, because: (1) Biopsy specimens obtained at the operating table can be prepared and ready for microscopic study within three to five minutes after removal, thereby furnishing immediate necessary information; (2) all borders should be carefully studied at the time of operation to assure the operator that the excision is well beyond cancer tissue and that no residual cancer cells are left behind either in the tissue by invasion or in the lymphatics by direct extension and proliferation.

OLD SCARS

Old scars resulting from burns (Fig. 1) and areas of radiodermatitis should always be viewed with suspicion and patients instructed to be meticulous in their care of these areas: They should be thoroughly clean at all times and the surfaces kept soft and pliable by the application of a bland cream. Unless this routine is followed, these areas will ultimately become hard and scaly and subsequently become extremely dry, which condition is associated with the formation of fissures. These last mentioned changes are frequently the precursors of early malignant changes. Either type of lesion which shows these changes should be completely excised, because of the rather high incidence of cancer development in old scars and skin which has been altered by the effects



Fig. 1 A. Photograph showing Marjolin's ulcer which developed in old scar following burn.



Fig. 1 B. Photograph showing defect resulting from eradication of Marjolin's ulcer followed by repair with Davis skin grafts.

of radiation. Excision in these cases should be wide and sufficiently deep to go well beyond all involved tissues. Repair of these cases frequently requires some type of skin graft as the defects are commonly so large that they do not permit closure by direct approximation of defect borders. In cases in which the defect is deep, it may be necessary to repair it by either a single or tubed pedicle skin transplant. In cases which are questionable, it is frequently advisable to do a complete resection of the regional lymphatics. Pigmented moles should be closely observed, and, when situated in areas which are constantly subjected to trauma, it is advisable to insist on their removal. The dark pigmented mole of the blue or black type is particularly dangerous because it is more likely to undergo malignant change when irritated and because of its highly malignant nature when these changes occur. Pack states that the treatment for malignant melanoma should be wide surgical excision, preferably with the endotherm knife. He also states that the tumor should be handled with extreme gentleness during its removal. In a series of over 400 cases of this type of tumor, studied at the Memorial Hospital in New York, Pack and Adair found only 17 cases which showed any appreciable response to radiation. Radiation therapy alone is not considered sufficient to control the growth and metastasis of these tumors. Pack states that he is convinced that prophylactic inguinal or axillary dissection should be done in the treatment of these tu-

mors of the extremities, reserving radiation therapy for postoperative use in order to produce abortive fibrosis by the production of firm scarring and imprisonment of residual cells. Adequate excision in these cases frequently produces defects which are too large to repair by direct approximation of the defect borders and satisfactory repair must be accomplished by means of skin grafting. Either the Davis grafts or the half-thickness grafts are satisfactory for the repair of these defects. If the defects are deep, repair by some suitable type of pedicle skin transplant is indicated.

CANCER OF LIP

Cancer of the lip, particularly the extensive fungating type, can be satisfactorily excised by removing sections of the lip which are adequate in size to insure complete removal of all cancer bearing tissue. If the growth is sufficiently localized to permit its extirpation by the removal of a V-shaped wedge of tissue, repair can be done satisfactorily by direct closure of the defect borders. Closure in these cases can be accomplished by approximating the mucous membrane borders with interrupted sutures of black silk, the muscle layers with one or two mattress sutures of No. 00 chromic catgut, and the skin margins with No. 0000 silkworm gut. If removal of a rectangular block of tissue is indicated in extirpating these tumors, repair becomes more difficult and necessitates the shifting of tissue into the defect for the reconstruction of the greater part or all of the lip. This type of repair is best accomplished by the use of an advancement skin pedicle flap, dissected from tissues which are lateral and inferior to the defect and subsequently advanced upward into the defect to be repaired. A pattern of the defect is made and bisected and a pedicle one-half the size of the defect is dissected from either side. These pedicles when dissected consist of skin, underlying fat, and muscle. If measurements are properly taken the pedicles approximate when brought into the defect in a manner which permits the suture of their distal borders without tension. Following the dissection of the skin pedicle, it is necessary to outline pedicle flaps from mucous membrane of the cheek which can be mobilized and advanced into the defect in such manner that

their mucosal surface is the oral surface, thereby acting as the mucous membrane lining for the newly formed lip. These mucous membrane flaps are fashioned with sufficient width to permit the upper margins of the skin flaps to be covered by mucous membrane, thereby forming a satisfactory vermilion border. When the intra-oral defects have been closed by direct approximation of defect borders with interrupted sutures of black silk, and the mucous membrane flaps have been sutured into their final position, a satisfactory buccal sulcus is



Fig. 2 A. Defect of cheek, upper and lower lips, following extirpation of squamous cell carcinoma.



Fig. 2 B. Shows first stage repair by rotation flap from forehead, inverted to form lining of defect. External defect repaired by approximations of skin margins.



Fig. 2 C. Photograph showing patient following final stage of repair. Note scar on neck resulting from resection of cervical nodes.

restored along with a lip which is normal in appearance, thickness, and length, and a satisfactory vermilion border is visible.

CANCER OF FACE

Defects over the cheek (Fig. 2) which result from extirpation of cancer may be repaired, if the defects are only of skin depth, by means of a half-thickness graft; as a rule, however, the depth of the resulting defects is sufficient to require muscle or fat implants along with skin, thereby necessitating the use of a single or tubed pedicle skin transplant.



Fig. 3 B. Photograph showing final stage repair by means of rotation forehead flap, which was lined before attachment to the border of defect.

Care must be exercised in fashioning pedicle transplants if these defects are located near the eyelids or the mouth, otherwise contraction will follow, giving subsequent distortion which may produce an ectropion of the lids or an unsightly appearance about the mouth. Defects at the inner canthus of the eye (Fig. 3) are best repaired by a rotation pedicle flap from the forehead, because these defects are too deep for repair by skin grafting and a pedicle transplant is usually required to bring into the defect sufficient substance to fill out the contour of this area satisfactorily. Infection and lessened blood supply at the base of these defects are two other factors which favor a transplant as opposed to a graft.

CANCER OF NOSE

Defects of the nose resulting from surgical excision of cancer may vary in size from small areas which can be readily closed by direct approximation of the defect border to defects which require a total rhinoplasty. In the small surface defects of the nose that cannot be closed by direct approximation of the defect borders, a satisfactory result may be obtained by means of a half-thickness or full thickness skin graft. The ideal skin for this repair is that from the mastoid region or the forehead, because it is more similar in color and texture to the skin over the nose and face than any

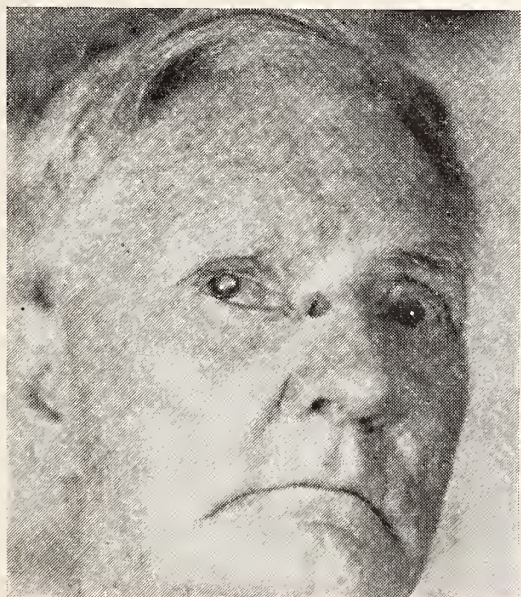


Fig. 3 A. Defect at the inner canthus of the right eye extending through entire wall of nose, following radiation for carcinoma.

other skin available. Defects of the nose which require a subtotal or total rhinoplasty are best repaired by means of single pedicle forehead flaps of the rotation type. Two factors must be present for a successful reconstruction of this type: (1) a satisfactory lining, and (2) a satisfactory covering which is not under too much tension. If there is considerable loss of bone and cartilage then support must be given by a cartilage graft or osteochondral graft. A satisfactory lining may be produced by applying a half-thickness skin graft to the under surface of the forehead pedicle before bringing it down into the final position for reconstructing the nose.

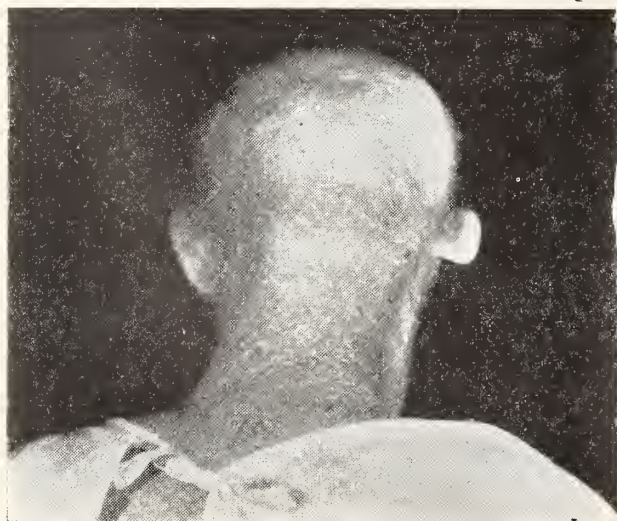
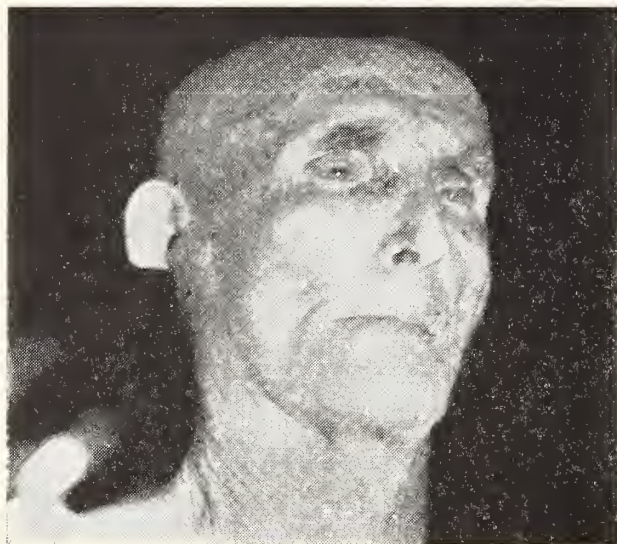


Fig. 4A and B. Showing deformity of ear following surgical excision of squamous cell carcinoma.

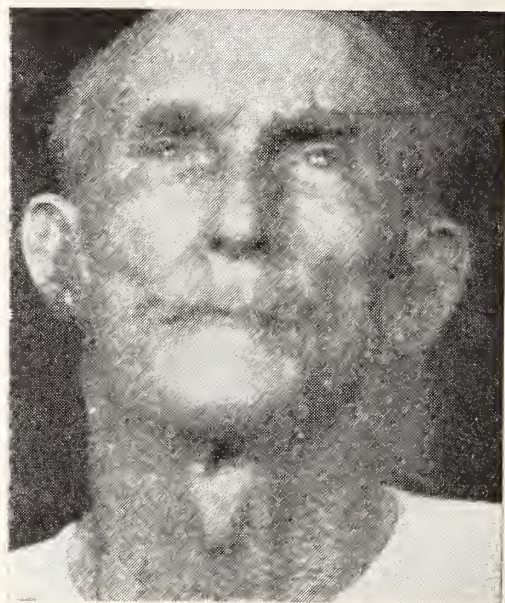
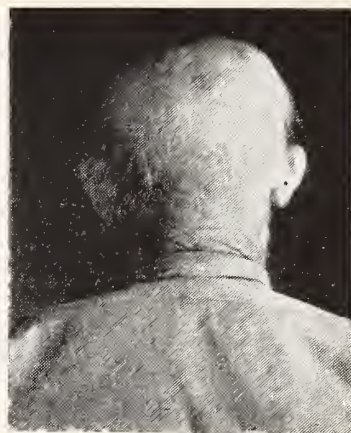


Fig. 4C and D. Photographs showing appearance of ear following repair by means of single pedicle skin flap from mastoid region.

CANCER OF THE EAR

Cancer of the ear (Fig. 4) is probably better treated by surgery than by radiation because of the large amount of cartilage which forms the framework of the ear. Adequate amounts of radiation for the destruction of many of the tumors of the ear are not well tolerated by cartilage. Whenever possible the lesions on the ear should be removed by incisions which are directed radially in a manner which will facilitate the removal of segments in the form of pie-shaped portions of tissue, leaving a V-shaped deformity. A deformity of this type may be corrected by direct approximation of the defect borders and the healed result will show little if any apparent deformity except

a proportionate reduction in the size of the ear. Due to the cartilaginous framework, however, virtually every other type of defect, if closed by direct approximation of borders, will show a marked distortion in contour due to the buckling of cartilage. Probably the most satisfactory method of repair for loss of ear segments other than V-shaped defects is by means of a single pedicle skin transplant from the mastoid region. A pattern of the ear defect is made and an area identical in size and shape is outlined over the mastoid region, using care to give sufficient length to the pedicle to permit anastomosis of its borders to the borders of the defect without undue tension. The resulting mastoid defect may be closed by direct approximation of the defect borders or repaired by a suitable type of skin graft. After a period of two weeks, the pedicle attachment is severed and the incised border of the pedicle is anastomosed with the remaining free border of the defect, to complete the anastomosis of the skin pedicle with all the borders of the defect. The posterior non-epithelialized surface of the pedicle may be grafted or permitted to epithelialize.

ANTRAL DEFECTS

Defects of the antrum resulting from eradication of cancer are frequently large and entail extensive repair for their correction. In association with these defects of the antrum the surrounding skin of the face is often destroyed either as a result of radionecrosis or destruction by actual cautery. A satisfactory and permanent repair of an antral defect requires the restoration of the antral lining as well as skin to cover the outer surface defect of the face. The lining may be satisfactorily restored by means of a single pedicle forehead flap of the rotation type, brought down and attached to the surrounding borders of the defect, skin side toward the inside of the antrum. Following the formation of the reconstructed lining of the antrum, the surface defect over the face is repaired by a tubed pedicle skin transplant, usually brought (by attachment to the arm) from the abdomen. There is seldom sufficient tissue available in the face for repair of the facial defect by means of a single pedicle skin transplant and for this reason it is necessary

to go to a distant site for sufficient available skin, thus necessitating the formation of a tubed pedicle skin transplant.

CHEST WALL DEFECTS

Surface defects of the chest wall, following the adequate removal of tissue in the radical extirpation of tissue for breast cancer, are frequently troublesome and of sufficient size to warrant repair by means of skin grafting. Unless infected, these areas may be satisfactorily repaired by means of a half-thickness skin graft. Repairs are frequently done by means of the Thiersch grafts, but this latter type is not so stable as the half-thickness graft and consequently more prone to subsequent ulceration. If infection is present in these defects, the ulcers are best treated by frequent applications of hot hypertonic saline solution. If there is lessened blood supply over these defects due to former radiation, it may be necessary to form lateral sliding pedicle flaps to cover the defect and repair the defects resulting from the formation of the pedicle flaps by means of a half-thickness skin graft.

THE VULVA

Because external radiation is not tolerated well and because most cancers of the vulva are radioresistant and because the tissues of the vulva do not tolerate interstitial irradiation, surgical excision in cases of cancer of the vulva is usually indicated and vulvectomy is the method of choice. Prophylactic external irradiation to both groins is indicated after vulvectomy and when metastasis is evident, bilateral inguinal dissection should follow. The defect caused by vulvectomy may be adequately and satisfactorily repaired by means of a rotation single pedicle skin flap from the pubic region, thus restoring normal contour with hair bearing skin.

CONCLUSIONS

1. A large percentage of the cases requiring radical surgery in the treatment of cancer could be spared the extensive procedures so frequently required if precancerous lesions and early cancer were adequately treated.
2. Plastic surgery is definitely allied with the treatment of cancer and by means of plastic surgery many disabling defects may be satis-

factorily and adequately repaired, thereby improving the cosmetic appearance of the patient and lessening the functional defect of the part.

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DISCUSSION

Dr. W. R. Mathews (Shreveport): One sees in connection with cancer treatment a rather urgent

need for the reconstructive surgical procedures that Dr. Owens has just discussed. Despite adequate methods for treating the majority of accessible cancer with little or no tissue loss or deformity, there are a number of circumstances under which tissue defects of both functional and cosmetic importance occur. The majority of these develop in connection with slow growing epitheliomata and result mainly from delayed or inadequate treatment. In many instances severe infection is present which accelerates the progress of the disease and frequently defeats therapeutic efforts ordinarily adequate in uncomplicated cases. Under such circumstances tissue defects of major importance frequently occur due both to the disease and the radical procedures necessary for its eradication.

While I know nothing about the technical aspects of plastic and reconstructive surgery, I have observed excellent results in several cases which appeared to present quite difficult problems. A carefully planned and patiently executed reconstructive program in these cases by those who are experienced in this type of work usually results in marked improvement or complete correction of the deformity.

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PRINCIPLES AND PROPOSALS OF THE COMMITTEE OF PHYSICIANS

There has been sent to each member of the State Society a copy of the editorial published in the Journal of the American Medical Association November 27, 1937. There has also been sent to the members of the Orleans Parish Medical Society a draft of the Principles and Proposals suggested by a group of 400 odd medical men in this country for presentation

before the Parish Society. The members of the State Society are probably fully cognizant by now of the newspaper notoriety which has been obtained by the sending of these Proposals to the lay press and they also know of the unfortunate comments made by some of the blatant newspapers. When released to the papers, the Principles and Proposals were considered by some of the more sensational newspapers in their first printing as a so-called revolt against the American Medical Association. Subsequent editorial consideration apparently changed the point of view because the later comments contained nothing which would lead one to imagine that there was any such thing as a revolt in American medicine. As a matter of fact in the more conservative papers, newspapers which realize and appreciate that the evils of extensive federal control in the activities of the medical profession, or other professions as well, would be harmful to the future of this country, the comments were extremely favorable. In New Orleans, the Times-Picayune stated that there was no profession in the world that was receiving such small returns for the tremendous amount of work it did and that there was no profession which is giving gratuitously so much of its time to the poor as the medical profession. In the New York Herald Tribune, in speaking of the doctor, it was written that "the energy that he donates to unpaid hospital work and the attention he gives private patients who cannot pay their bills, the average physician . . . gives more hours a day than the most lavish philanthropist. This condition is unfair. The burden clearly should be shared by others." Statements and comments such as these indicate that the lay press is aware of what the physician is doing for charity, and for nothing.

It was extremely unfortunate that these Proposals were released to the lay press or that the press obtained them before the steps that most of the signers imagined to be taken were taken, namely to submit these Proposals to parish, or county, medical societies or the state societies. This has left a very bad taste in the mouth of many of those who signed the original Proposal. It was distinctly the understanding of many that these so-called Principles and Proposals were to be the basis of discussion in the halls of organized medicine. To have

them released prematurely and to be given to the lay press and seized upon by it as a sensational effort against organized medicine has given many of the signers uncomfortable moments. Most of these signers were men who have been interested and active in organized medicine. They represent men who have held and hold positions in the American Medical Association. They are men who have the best interests of organized medicine at heart and to have what they thought was a confidential matter that was to be discussed amongst doctors appearing as it did, was not their idea when the Proposal was signed. On the other hand, there are undoubtedly a few signers who took advantage, at this time and by this method, of bringing out their views which are not those of the great majority of the men on the list of signers.

Naturally, the officers and trustees of the American Medical Association have been deeply hurt by this action which superficially seems to be an attack on the American Medical Association. Such was far from the thought of most of the signers. They did not for a minute think that the American Medical Association would be attacked indirectly by newspapers unfavorable to the medical profession because these matters were to be discussed only by medical men in their meetings. It was obvious that what had been said in these newspapers would be snatched up and grasped by those antagonistic to the American Medical Association as evidence that there was a widespread feeling of discontent among the American medical profession. Such is decidedly not the case. Most of the signers are loyal American Medical Association members and determined protagonists of organized medicine. Any thinking medical man who would not back organized medicine heart and soul with all his power is a man who is either merely thoughtless, a natural obstructionist or a renegade. It was certainly not in the minds of most the signers to attack the American Medical Association, nor did they think it would be brought into discussion.

Now, a word as to the Proposals themselves. It was pointed out in the *Times-Picayune* that the P. W. A. worker, the man receiving state and governmental aid, has to pay his grocery bill, has to pay his rent, has to pay for every-

thing and everybody except possibly the social worker who is remunerated by the government, but the doctor receives nothing. The amount of time that the average physician gives to these large numbers of the subsidized proportions of the population is enormous. In New Orleans alone there are over 61,000 unemployed, not including the unemployable. Not only is the doctor asked to see the sick man or woman on relief, but he is called upon to examine the healthy to determine if they are fit to work, to fill out innumerable forms and to spend much time, usually for nothing. Something should be done about this. If these so-called Proposals stimulate the medical profession to go after their rights some good may be accomplished by them. One of the paragraphs of the Principles and Proposals has to do with support of medical education and studies to raise the standards of medical practice. This is one of the so-called Proposals which has been vigorously criticized, but as a matter of fact, the great majority of medical schools in this country are directly supported by public funds and the few that are not are receiving public funds indirectly. Furthermore, another one of the criticisms has been levied at the fact "public funds should be made available to hospitals to render service to the medically indigent." So this is exactly what has recently been done in the State of Louisiana. Our state governmental authorities realize that this is an economic necessity, as it can be seen from the reading matter in the section on Louisiana News issued by the State Hospital Board. Unjustly this Board does not contain a representative of the medical profession. Attempts are being made to correct this out-and-out unfairness.

It is to be hoped that Parish Societies and the State Society will give thought to these Proposals. They were believed to be, when signed, innocuous generalities and broad statements which would stimulate medical men to demand their rights in so far as intelligent recompensing of the physician would be attained. Let it be understood definitely and positively that these Proposals are not an attack on organized medicine; let it be understood by the critics of organized medicine that never before have medical men been so cohesive and as desirous of standing together as now.

SOUTHERN MEDICAL

The Southern Medical Association has had its meeting in New Orleans and the members have gone. They left behind them pleasant memories.

The total registration was 5,283 of whom 2,800 were doctors and nearly 1200 of whom were accompanied by their wives; the remainder was made up of students, nurses, technicians and exhibitors. The outstanding events of the meeting were the general sessions, the ball, and the honoring of Dr. Goodpasture, awarding him the Research Medal of the Association. The scientific exhibit exceeded all other scientific exhibits of the Association. It was large and contained most excellent material in all branches of medicine. Two New Orleans men, Dr. L. J. Menville and Dr. J. N. Ane, were one of the group of three receiving honorable mention for their exhibit. The first award went to a group of doctors in San Antonio, the second award to Dr. A. C. Scott of Temple, Texas, and the third to Dr. J. F. Hamilton of Memphis.

Much credit for the success of the meeting is due Dr. Lucien A. LeDoux who, as General Chairman of the Committee on Arrangements, worked with untiring energy and tremendous zeal. He was ably assisted by a group of sub-committee chairmen. Dr. John Archinard was Dr. LeDoux's right hand man and did much to further the interest of the meeting. We were pleased to find that the Southern Medical appreciated Dr. LeDoux's untiring services and honored him by election as First Vice-President for next year.

If there is any criticism to be made of the meeting it would be that the general sessions were poorly attended. Some of these section meetings had only a small number in attendance, whereas the preliminary clinics were very largely attended. It is realized and appreciated that in the sections devoted to specialties the attendance will not be large, nevertheless it is felt that possibly if the section chairmen and secretaries were to provide programs which might be of considerable general interest, the section meetings might be better attended than they are now. Certainly the section meetings should be the most important part, scientific-

ally, of the whole program, whereas it would seem that many of the adjuncts of the meeting are more popular than the fundamental divisions.

The general officers elected for next year include as President, Dr. J. W. Jervey, Sr. of Greenville, S. C.; as First Vice-President, Dr. Lucien A. LeDoux; as Second Vice-President, Dr. Lee Rice of San Antonio. The editor of the journal, Dr. Dabney and the associate editor Mrs. Dabney were re-elected and Mr. C. P. Loran was re-elected Secretary-Treasurer and Manager. It was decided that the 1938 meeting will be held in Oklahoma City at the usual time, the latter part of November.

PURPURA HEMORRHAGICA

Wintrobe and his co-workers* have recently published an article on purpura which warrants further exposition. Their report is based on studies made of 62 patients observed in Baltimore. Comment may be made on several facts in the etiology of the disease which are interesting. In the first place, the disease apparently is rare among negroes, only four of the group of 62 being of this race and that in spite of the fact that in Hopkins the ratio of negroes to whites is as three is to seven. The symptoms of purpura appear for the most part in the first decade of life; a certain proportion of their patients developed purpura after this time, up to the age of 30, and then a period of 15 years elapsed before the next group, the older people, came on the scene.

One of the interesting features of this study has to do with the course of the disease. There was a very distinct tendency for the disease to recur. The recurrences took place sometimes after the acute symptoms had entirely subsided and then only occasionally. On the other hand, there are a few patients who for years were found to bruise readily and who might be spoken of as having latent purpura. Six of 18 patients with recurrent disease remained well from three to 11 years after the last bleeding

*Wintrobe, M. M., Hanrahan, E. M., and Thomas, C. B.: Purpura hemorrhagica, with special reference to course and treatment, *J. A. M. A.*, 109:1170, 1937.

attack. Six other patients had symptoms and signs for many years; these the authors consider to have chronic purpura. The immediate death rate in the primary attack was not high, only two patients died. On the other hand, four expired who had symptoms over a period of years.

Splenectomy, since the report by Kaznelson in 1916, has been practiced very extensively in this country and Germany. Wintrobe and his associates point out that this is only symptomatic treatment; it is not by any means specific; and it is the most radical of the symptomatic methods of treatment that have been advocated. There is an operative risk and recurrences do follow operation. They contend, however, that it is the most effective therapeutic measure as yet advocated or employed.

It is interesting to note that in not all of these cases was there an increase in the number of platelets following splenectomy. This is in accord with the observations of others. It frequently happens that hemorrhage never takes place after splenectomy although, after an early increase in the number of platelets, they may again fall to critical levels. In 12 of the patients operated upon by removal of the spleen, the majority subsequently had a normal platelet count; in only three instances was the platelet count under 100,000. In these three individuals the bleeding time was respectively one and a half, nine and a half, and ten minutes,

whereas, in the other group the bleeding time was never over four minutes except in one instance when it was six.

This paper is well balanced and conservative. It points out something which is not generally appreciated, namely that all cases of purpura hemorrhagica are not benefited by splenectomy. Most certainly the fundamental cause of the disease is not removed when the spleen is taken out. As the authors say, the cause of the disease is not attacked but the important site for the destruction of platelets is removed. Therefore in considering splenectomy three things should be taken into consideration: (1) To perform the operation if the bleeding is severe and conservative measures have failed; they say do not hesitate about operating when the decision is made because with accurate blood transfusion bleeding can be controlled. (2) Because recurrences are more frequent in the female than the male sex, girls and young women are more likely candidates for operation than males. (3) Lastly, if growth and development are impaired by recurrences of bleeding or the economic or social status of the patient is jeopardized, operation should be considered. On the whole the best time to operate is during quiescent periods so that the dangers of hemorrhage, shock, infection and postoperative pneumonia are considerably reduced. --

The authors say they are not prepared to discuss snake venom therapy.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

HIGHLAND SANITARIUM

The Staff of Highland Sanitarium met on November 18, 1937. After an enjoyable dinner, the scientific program was held in the Highland Clinic Building.

An interesting discussion of the present treatment of varicose veins and varicose ulcers was given by Dr. Keith Mason. The present Mayo method of treating varicosities is that followed by Dr. Mason. The injection of sodium ricinoleate solution being used alone in cases where only the long and short saphenous veins are involved; where there are any tributaries, especially of the long saphenous vein, ligation is used in conjunction with the sclerosing solution. The discussion was opened by Dr. J. A. Hendrick who was followed by Dr. J. M. Bodenheimer. Dr. Mason closed the discussion.

Dr. M. S. LeDoux presented a case of bilateral dislocation of the hip, showing the roentgenologic view of this hip, pointing out occurrence and the rarity of the condition at this person's age. The patient is a woman 34 years of age who had no symptoms up to the present time. Dr. Guy A. Caldwell discussed the case and gave the operative and non-operative treatment and results of these conditions.

Election of officers was held. Dr. J. V. Hendrick was elected President; Dr. T. B. Tooke, Vice-President; Dr. Albert Owers, Secretary-Treasurer. E. D. Rowland, M. D., Sec.

HIGHLAND SANITARIUM

The regular monthly meeting of the Staff of the Highland Sanitarium, Shreveport, was held December 16, 1937 in the Clinic Building, following

dinner at 7 p. m. Dr. E. C. Edwards was unanimously elected to membership on the staff.

Dr. Paul D. Abramson presented a paper on arteriovenous aneurysm. The etiology, symptoms, signs and diagnostic procedure were thoroughly covered. His talk was splendidly illustrated by a lantern slide demonstration which included photographs of the extremely interesting cases which he has collected.

Dr. C. R. Mays gave an extremely interesting and timely discussion on the problems of sterility. Particular stress was laid on recent developments in the studies on the spermatozoa in relation to sterility, and the various diagnostic procedures, both on the male and female, were discussed.

Dr. J. A. Hendrick presented an interesting case of pelvic hematoma following normal appendectomy, which produced obstruction eight days post-operatively. The patient recovered after obstruction was relieved surgically. Dr. Hendrick also reported on the recent Southern Medical Association meeting, which was held in New Orleans. Dr. C. S. Sentell and Dr. S. W. Boyce also brought out some interesting highlights on this same meeting.

Following discussion of the deaths occurring in the Sanitarium during the past month, the meeting was adjourned.

Albert Owers, M. D., Sec.

FRENCH HOSPITAL

A regular meeting of the staff was called to order on December 14 with Dr. R. L. Gordon presiding. The minutes of the last meeting were read by Dr. R. E. Rougelot.

The deaths of the previous month were then discussed generally.

Dr. Charles A. Bahn presented a lantern slide demonstration showing the various types of endocrinopathic syndromes and how ocular symptoms may occur reflexly.

The following officers were elected unanimously: Dr. Joseph Palermo, Chairman; Dr. Maurice Lescale, Vice-Chairman; Dr. R. E. Rougelot, Secretary.

Dr. Zander suggested that thanks be given to the present officers for the activity during the past year.

R. E. Rougelot, M. D., Sec.

MERCY HOSPITAL

The Staff of Mercy Hospital met on the evening of December 8, 1937, one week later than usual so as not to interfere with the meetings of the Southern Medical. Dr. John Dicks called the meeting to order at 8:00 p. m.

The Staff was treated to a very interesting and educational talk, with lantern slides, on various phases of electrocardiography by Dr. Edgar Hull.

This presentation was most timely inasmuch as the hospital has recently added an electrocardiographic service.

Following this the meeting went into executive session after a short recess.

H. Ashton Thomas, M. D., Sec.

GRADUATE SCHOOL LOUISIANA STATE UNIVERSITY MEDICAL CENTER NEW ORLEANS

The scientific meeting of December, 1937, was called by Dr. James T. Nix, Dean of the Graduate School. Dr. C. E. Gorman presented the following paper.

SQUAMOUS CELL CARCINOMA GRADE I

The hoary beard of certitude which enshrouds traditional thinking resists the pruning shears of new discovery. After careful consideration we find that this portrays exactly what has happened in reference to squamous cell carcinoma I. It has been more or less accepted by the profession that this grade of carcinoma does not metastasize, or if so, not early; that the treatment for this type of carcinoma is surgery alone; that the accepted surgical treatment is a panacea; that roentgen ray or radium therapy is not indicated in such carcinomas; that this phase of cancer treatment is not necessary either as a preoperative or a postoperative measure.

Thus have we of the profession sat complacently in our rocking chairs content in the certainty that these cancers would be cured by surgery. When the primary lesion was excised completely, the wound healed, and then we believed the patient could be discharged as cured. The object of this paper is definitely to show that this type of malignancy is not as harmless, and is not cured so easily as heretofore has been believed.

In considering the pathologic histology of squamous cell malignancy, MaCallum¹ remarks that the relation of the tumor cells to the adjacent tissues is an exceptionally important point for consideration. These tumorous cells are not bounded by any definite line of demarcation. They grow out irregularly, pushing into the adjacent structure in a most abnormal manner of growth. They know no bounds.

Hanes and Lambert have shown that these cells possess a certain ameboid movement. It is probably this movement that enables them to get into the lymph channels. In addition to this possibility, the probability of direct extension by means of this movement must be considered. This will probably explain the peculiar metastasis in the case reported as Number 1. In this particular instance the secondary or metastatic lesion was not in the lymph glands. It appeared in the soft tissues of the forearm just below the elbow. The

condition appeared as an acute inflammatory reaction; the cardinal signs of inflammation were present. The examination of fluid removed by an aspirating needle revealed malignant cells. Open biopsy proved this to be squamous cell I. The patient succumbed to widespread metastasis. The original lesion was squamous cell carcinoma I. Wide excision of the cancer was done at Charity Hospital prior to his admittance to the Tumor Clinic. Only his thumb and forefinger were left. It is quite possible that the metastatic lesion can be explained on a basis of cancer diathesis.²

Boyd,³ in his discussion of gradings, reflects the popular belief. Grades I and II are treated surgically. Grades III and IV are amenable to roentgen ray therapy. I agree that I and II should have surgical interference. This is essential as these tumors are radio-resistant. The fact that they do not respond to irradiation should not mean that these patients are to be denied the benefits of roentgen ray therapy. On the contrary, it is my belief that preoperative roentgen ray to the regional tissues and glands is as important in this type of cancer as in the more highly malignant grades. This is contradictory to the present routine as is generally advocated. Dr. Coutard even suggests that after surgery, patients should not receive irradiation until metastatic glands have appeared. This may be possible when dealing with a highly malignant or Grade IV cancer which is extremely radio-sensitive. This type supposedly fades rapidly under roentgen ray therapy. Viewing therapy logically, this would not be my choice of method. Contrary to the idea of waiting for metastasis to occur, these cases should receive massive doses of roentgen ray. This irradiation should be preoperative as well as postoperative. The reason for this conclusion is based on the old Chinese proverb that a bundle of sticks is stronger than a single one. Likewise, lymph glands or tissues containing sparsely scattered metastatic cells, or malignant emboli, should respond to irradiation. This response should be much more complete than where a large metastatic gland is present. Therefore, where dealing primarily with a radio-resistant tumor, it is logical to conclude that our chances of cure will be increased in direct proportion to the number and age of the cells present. The by-word of the American College of Surgeons is "cancer is curable." Much stress is placed upon the early recognition and institution of proper treatment. Why should metastatic malignancy be treated differently? It should not!

Every surgeon has encountered metastatic malignant glands while doing a radical mastectomy, glands that could not be palpated and which appear only slightly enlarged. These glands, on microscopic sectioning, reveal an extensive malignant process. The same is applicable to squamous cell

carcinoma Grade I. Even though the regional adenopathy may not be palpated, it is logical to assume, from the case reports contained in this study, that many of these cases have metastasized prior to the excision. We are dealing with a radio-resistant tumor, and it is evident that if a cure is to be obtained it will be through the combination of preoperative radiation, surgery and postoperative radiation.

Now that we have an insight into this supposedly very mild tumor, which in reality reaps a heavy toll of lives, we see the possibility of leaving a small portion in the healthy tissue. Ewing has brought out a very significant fact, one which might readily be applied to this condition. He made the statement that one of the salient features which either accompanies, or precedes, any malignant process is its power of exciting a reaction in the surrounding cutis. Satenstein,⁴ in his discussion of the histology of epithelioma, applies this statement of Ewing. He advocated a thorough study of the growth and the surrounding tissue by means of serial section. His object is to visualize the "oneness" of the infiltrating mass with the cells of the adjacent tissues. It is impossible, often, to determine a connection between malignant and healthy tissue even by serial section. The inflammatory reaction surrounding the malignancy is capable of "pinching off" little groups of neoplastic cells. These cells are left in apparently normal tissue. This is similar to an embryonic rest. It takes little or nothing of a stimulus to excite these cells to overgrowth.

In skin cancer of all varieties metastasis is frequent.⁵ As has been pointed out by Ward,⁶ and others, the rate, rapidity, and widespread metastasis is in direct proportion to the embryonic structure of the cells. Ward emphasizes the fact that many of the large squamous cell malignancies of the hand and face require heavy irradiation prior to surgical removal. Butler and Woolley⁷ advise heavy doses of postoperative irradiation in these cases. The Suttons⁸ advocate excision with the knife cautery and follow-up with radiotherapy. Rienhoff⁹ impresses us with the resistancy of epithelial cancer. Reimann¹⁰ summarizes irradiation therapy as a method to stop the multiplication of cancer cells. If this cannot be done, then mature the ones already formed. This is really the ideal towards which we strive in cancer treatment. Maturity of cells means the cessation of multiplication. Therefore, the deductions are that these tumors should receive heavy preoperative irradiation, surgery (preferably with the electric cautery knife), and extensive postoperative irradiation.

The majority of the references were considering squamous malignancy in general. Now let me consider squamous cell Grade I specifically. This con-

dition is gravely serious for one particular reason. It has always been considered the least malignant and the least probable to metastasize. This gives the first advantage to the malignancy. It is treacherous. Metastasis takes place more often than is expected. It must not be considered as lightly as it has been in the past. I believe that a combination of the therapy suggested by the various authors would be the nearest possible to what is ideal. Forget that Grade I is supposed not to metastasize. It is cancer. It is radio-resistant. Therefore, the patient should receive preoperative deep therapy to the lymph nodes up to tolerance; excision of the tumor, preferably with the electro-coagulating knife; postoperative irradiation of the lymph nodes and the area of excision. This intensive and radical treatment may not be necessary in many cases, yet when dealing with such a tumor it is not fair to the patient unless you give him every chance.

One hundred and eighteen cases of squamous malignancy were reviewed. The patients have been observed at the Tumor Clinic of Charity Hospital. Some very interesting data have been gleaned from abstraction of these case reports. Of the 118 cases, 31 were Grade I, 52 were Grade II, 22 were Grade III, three were Grade IV, and ten were unclassified. The greatest number occurred in the oral cavity, which was 59. The next largest number occurred on the lips. Seventy-nine were males, 39 were females. Seventy-six were white and 42 were colored.

In reviewing the 31 squamous Grade I patients there were 18 with metastasis. Some of these had been operated on prior to admission to the Tumor Clinic. The lesions were all excised with a wide border of normal tissue. Every patient received the accepted conventional treatment, yet 18 came back with metastases. Eleven of this group expired. This was despite intensive deep roentgen ray therapy. Fortunately, the remaining seven received early irradiation and are doing well up to date.

CASE REPORTS

Case I. Mr. F. C., a white male, aged 56 years, was referred to the Tumor Clinic October 11, 1934, one month postoperative amputation of right hand excepting index finger and thumb. The diagnosis was squamous cell carcinoma Grade I. Notation was made of suggestive epitrochlear lymph adenopathy. No axillary nodes were palpable. On May 24, 1935, he returned with swelling of the forearm. Aspiration of fluid gave suggestion of malignant cells. Surgery was recommended, but the patient procrastinated. Amputation was done

at the mid-portion of the right arm. Microscopic diagnosis was squamous cell I. The patient developed axillary nodes and received deep roentgen ray therapy. He expired June 17, 1936.

Case II. Mr. O. B., aged 57 years, white male, applied to the Tumor Clinic on May 19, 1936, with a lesion on the dorsum of the hand. Biopsy showed squamous cell I. The lesion was excised completely. The patient returned five weeks later with small recurrences around the scar. On July 2, 1936, the patient received 150 mg. hr. of radium to recurrent carcinoma. The lesion healed on the hand. On May 11, 1937, he returned with axillary and epitrochlear lymph enlargement.

SUMMARY

After reviewing the literature and 118 cases of squamous cell malignancy, several points of interest were noted. Thirty-one (26 per cent) of the cases were squamous cell carcinoma Grade I. Fifty-two (44 per cent) were squamous cell Grade II. Seventy-nine (67 per cent) were males; 39 (33 per cent) were females; 66 (64.5 per cent) were white patients; 42 (35.5 per cent) were colored. Eighteen (50 per cent) of the squamous cell Grade I cases metastasized. Eleven (61 per cent) of the 18 cases with metastases expired.

CONCLUSIONS

1. Carcinoma Grade I metastasizes more often than heretofore believed.
2. Preoperative and postoperative irradiation should be given these cases.
3. Complete excision of the tumor, preferably with the electrocautery knife, should be done.

REFERENCES

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4. Satenstein, D. L.: Histologic evidence of epithelioma of the skin, Arch. Dermat. & Syph., 33:48, 1936.
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9. Rienhoff, Wm. L.: Principles and Foibles of Cancer Research, p. 132, Waverly Press.
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TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

- January 3. Board of Directors, Orleans Parish Medical Society, 8 p. m.
- January 3. Pathologic Conference, Hotel Dieu, 8:15 p. m.
- January 4. Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.
- January 5. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- January 5. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- January 5. Mercy Hospital Staff, 8 p. m.
- January 10. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m. Installation Meeting.
- January 12. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- January 12. Touro Infirmary Staff, 8 p. m.
- January 14. French Hospital Staff, 8 p. m.
- January 17. Hotel Dieu Staff, 8 p. m.
- January 18. Charity Hospital Medical Staff, 8 p. m.
- January 19. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- January 19. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- January 18. Charity Hospital Surgical Staff, 8 p. m.
- January 20. Eye, Ear, Nose and Throat Club 8 p. m.
- January 20. New Orleans Hospital Council, DePaul Sanitarium, 8 p. m.
- January 21. I. C. R. R. Hospital Staff, 12 noon.
- January 24. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- January 25. Baptist Hospital Staff, 8 p. m.
- January 26. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- January 26. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- January 28. L. S. U. Faculty Club, 8 p. m.

meeting. The returns of the election were announced as follows:

President: Dr. Shirley C. Lyons.
 First Vice-President: Dr. Edgar Burns.
 Second Vice-President: Dr. H. Ashton Thomas.
 Third Vice-President: Dr. Lucien A. Fortier.
 Secretary: Dr. Gilbert C. Anderson.
 Treasurer: Dr. Edwin H. Lawson.
 Librarian: Dr. Donovan C. Browne.

Additional Members

Board of Directors

Dr. Isidore Cohn.
 Dr. George Hauser.
 Dr. James T. Nix.

NEWS ITEMS

Dr. Walter J. Otis addressed the Baton Rouge Group of the Louisiana State Society for Mental Hygiene at Baton Rouge on Wednesday, November 17, his subject being "Mental Hygiene and Medicine."

Drs. John H. Musser and P. T. Talbot attended the Conference of State Secretaries and Editors in Chicago, November 19 and 20.

Dr. Charles A. Bahn was re-elected President of the Louisiana Society for the Prevention of Blindness, at a meeting held Friday, November 26.

Dr. H. Vernon Sims was elected President of the Southern Interurban Gynecological and Obstetrical Society at the seventh annual meeting of the group held prior to the meeting of the Southern Medical Association, November 30.

At the organization meeting of the Alumni Association of the Eye, Ear, Nose and Throat Hospital, the following members of the Society were elected on the Board of Directors: Dr. Lucian W. Alexander, President; Dr. Philip J. Bayon, Secretary-Treasurer; Councilors, Drs. M. P. Boebinger and Francis E. LeJeune.

Dr. Ruth G. Aleman was elected chairman of the Southern Medical Women's organization at a meeting held December 1.

The following members of the Society attended the meeting of the Southern Surgical Association at Birmingham, Alabama, December 7-9: Dr. Alton Ochsner, Secretary, Drs. Isidore Cohn, I. M. Gage, Howard R. Mahorner, Hilliard E. Miller, Ambrose H. Storck and Curtis H. Tyrone. Dr. Storck was elected to membership at this meeting.

Drs. Gilbert Anderson, Shirley C. Lyons, and

During the month of December the Society held one meeting. This was the Twelfth Annual Stanford E. Chaillé Memorial Oration held Monday, December 6. Dr. Walter Timme of New York, the orator of the evening, presented the following paper: "Status Hypoplasticus: Its Bearing on All Fields of Medicine and a Discussion of the Automatic Compensatory Mechanisms Involved."

The Annual Dinner of the Society was held Saturday, December 11, at the New Orleans Athletic Club. This get-together was enjoyed by the members in attendance and served as the election

John T. Sanders addressed the South Mississippi Medical Society meeting on December 8.

Dr. T. A. Watters addressed the Gulf District of the American Association of Medical Social Workers on Wednesday, December 15.

ATTENTION DOCTORS!

Soliciting your aid and cooperation toward the success of two important activities of the Woman's Auxiliary to the Orleans Parish Medical Society!

We are collecting physicians' samples and have found a decided need for them in the various clinics of the city where they are dispensed under competent medical supervision. Mrs. J. Browne Larose, at Walnut 4736, who is in charge of this work, will collect your samples whenever notified to do so. We assure you that you will neither be disturbed nor annoyed, as the committee will call only when requested by you.

If you have a discarded suit, hat, shirt, or pair of shoes, please telephone Uptown 0591 either now or any time this year. Our chairman, Mrs. Jerome Landry, will be glad to send for your bundle, the contents of which will be distributed among the needy medical students of the city.

Help us to help others!

TREASURER'S REPORT

November

Actual Book Balance 10/31/37	\$2,603.10
November Credits	759.52
Total Credits	\$3,362.62
November Expenditures	520.03
Actual Book Balance 11/29/37	\$2,842.59

LIBRARIAN'S REPORT

The Library has loaned to doctors during November, 917 books and journals. An additional 912 items have been loaned to students for overnight

use, making a total of 1,829 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

During November, 28 volumes have been added to the Library, all of them by binding. It is to be regretted that funds have not permitted us to bind more of our back files of journals during the current year.

Members of the staff have collected material on the following subjects during November:

Artificial larynx.

Metrazol in treatment of schizophrenia.

Heart function tests.

Laryngectomy.

Writings of Dr. G. Piness.

Personal bibliography of Dr. Shirley Lyons.

Sublingual melanoma.

Medicine as a career.

Labor in very old and very young primipara.

Endometrial transplants.

History of the first medical school in the U. S.

Sodium hexametaphosphate.

Endometritis.

Death from pentothal anesthesia.

Harelip.

Sulphanilamide.

Transposition of organs.

Women in medicine.

History of otolaryngology.

In addition to these more formal reference questions, there have been a great number of calls for the verification of references and material on individual physicians in preparation for the meeting of the Southern Medical Association.

An extensive exhibit illustrative of Medicine in Art and Anatomical Drawing, has been gathered in the Library for this meeting. An announcement of the exhibit was inserted in the Official Program and a great many visitors have come to see the material.

Gilbert C. Anderson, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

ST. TAMMANY PARISH MEDICAL SOCIETY

The St. Tammany Parish Medical Society met in regular session December 17, in Slidell. The attendance was below par because of inclement weather and sickness.

The meeting was addressed by Dr. Roy Carl Young and Dr. W. L. Stevenson, who presented interesting subjects that brought out much discussion and favorable comment.

The following officers were elected for the coming year:

President: Dr. Frank F. Young, Covington.

Vice President: Dr. F. R. Singleton, Slidell.

Secretary-Treasurer: Dr. H. D. Bulloch, Covington.

Delegate: Dr. Roy Carl Young, Covington.

Alternate: Dr. H. E. Gautreaux, Covington.

H. D. Bulloch, M. D., Sec.

TRI-PARISH MEDICAL SOCIETY

A regular meeting of the Tri-Parish Medical Society was held at Tallulah on December eighth. Members present included Drs. J. Preston Davis, president, and William H. Hamley, secretary-treasurer, of East Carroll Parish; Joseph Whitaker and Donovan F. Davis, of Tensas; Dean Allen, E. Otis Edgerton, H. S. Provine, H. C. Sevier, A. T. Palmer, Leihue Stevens and O. H. Armstrong of Madison.

Dr. A. S. Hamilton and Dr. D. T. Milam, both of Monroe, were guest speakers. Dr. Milam presented a paper on "Hematuria." Dr. Hamilton spoke on "Common Fractures of the Wrist and Hand." Both papers were discussed by the members of the society.

After the scientific session, officers for the coming year were elected as follows:

President: Dr. E. Otis Edgerton, Tallulah.

Vice-Presidents: Dr. B. C. Abernathy, Soudheimer.

Dr. Fritz A. LaCour, Oak Grove.

Dr. Joseph Whitaker, St. Joseph.

Secretary-Treasurer: Dr. Dean H. Allen, Tallulah.

The next meeting will be held at Lake Providence, January 4, 1938.

W. H. Hamley, M. D., Sec.

BI-PARISH MEDICAL SOCIETY

The meeting of the Bi-Parish Medical Society was called to order by the president on December 15, 1937, at the Rist Hotel in Clinton after a dinner served by Mr. and Mrs. August Rist.

The society was convened in regular order of business. The minutes of the previous meetings were read and adopted. Election of officers for 1938 resulted as follows:

President: Dr. C. S. Toler, Clinton.

Vice-President: Dr. W. J. Roberts, Felixville.

Secretary-Treasurer: Dr. E. M. Toler, Clinton.

Delegate: D. T. H. Pargen, Jackson.

Alternate: Dr. J. J. Ayo, Jackson.

Dr. J. D. Hutchins was elected a member of our society.

Dr. Shaw's address as retiring president was ordered printed in The New Orleans Medical and Surgical Journal and our parish papers. The address was as follows:

"I wish to express to you my sincere thanks for your generosity, indulgence and the kindness you have shown me during this past year and to tell you that I appreciate the honor given me in being elected as president of the Bi-Parish Medical Society.

"In heart's chest of life souvenirs, there are none that will be sweeter or more cherished than the association and friendships of you fine and excellent men and women of this society and of our distinguished guests.

"This is true, though we are carried back on the golden fairy wings to those happy carefree halcyon days of youth and childhood or in retrospect we recall incidents of the midday of life, its passions, ambitions, hardships, pleasures and failures. I trust a portion of success and now may the blessings of the great Master and Physician cast a halo of friends, peace and contentment around our heads and hearts as the shadows lengthen, pale

and fade away in the golden sunset of twilight of the evening of life."

On motion, Dr. E. M. Toler, having served our society continuously for the past twenty-five years, was made our life secretary-treasurer.

Dr. E. M. Robards of the East Louisiana State Hospital read a most excellent, instructive and scientific paper on "Bursitis." Dr. Robard's paper was freely and favorably discussed by every physician present. A vote of thanks was given Dr. Robards and Miss Tate for their preparation and presentation of this timely paper.

On motion, Mr. and Mrs. August Rist were extended our sincere appreciation for their most excellent dinner prepared for our society and guests.

The next meeting will be held on the first Wednesday in February at the East Louisiana State Hospital.

E. M. Toler, M. D., Sec.

RED RIVER PARISH MEDICAL SOCIETY

1938

OFFICERS

President: Dr. W. L. Davis, Coushatta.

Vice-President: Dr. L. S. Huckabay, Harmon.

Secretary-Treasurer: Dr. W. W. Gahagan, Coushatta.

Delegate: Dr. E. A. Carlisle, East Point.

AVOYELLES PARISH MEDICAL SOCIETY

1938

OFFICERS

President: Dr. A. B. Cairns, Bunkie.

Vice-President: Dr. L. W. Holloman, Marksville.

Secretary-Treasurer: Dr. Kirby A. Roy, Mansura.

Delegate: Dr. S. J. Couvillon, Moreauville.

Alternate: Dr. Remy Ducote, Bordelonville.

TRI-PARISH MEDICAL SOCIETY

1938

OFFICERS

President: Dr. E. O. Edgerton, Tallulah.

Vice-Presidents: Dr. Joseph Whitaker, St. Joseph.

Dr. Fritz A. LaCour, Oak Grove.

Dr. B. C. Abernathy, Soudheimer.

Secretary-Treasurer: Dr. Dean H. Allen, Tallulah.

Delegate: Dr. J. P. Davis, Lake Providence.

Alternate: Dr. W. H. Hamley, Lake Providence.

WASHINGTON PARISH MEDICAL SOCIETY

1938

OFFICERS

President: Dr. Norton Voorhies, Bogalusa.

Vice-President: Dr. Rawlin R. Ward, Bogalusa.

Secretary-Treasurer: Dr. Benjamin Freedman, Franklinton.

STATE HOSPITAL BOARD

Below will be seen the list of hospitals with which the State Hospital Board has made agreements for the hospitalization of the indigent and destitute sick. This list was sent to the Journal by Mr. A. R. Johnson, State Hospital Director, and he states as follows: "I want to emphasize again that hospitalization can be provided only on an emergency basis. The certifying parish director must in every instance have a signed statement by a competent physician clearly establishing the need of the individual for immediate hospitalization." There is then appended eligibility requirements for the hospitals, and, lastly, the honorary advisory committee membership.

Bastrop General Hospital,
Bastrop, Louisiana.
Garnier Clinic,
Bastrop, Louisiana.
Ferriday Hospital,
Ferriday, Louisiana.
Dr. S. F. Fraser,
Many, Louisiana.
Natchitoches Hospital, Inc.,
Natchitoches, Louisiana.
LaSalle Sanitarium,
Olla, Louisiana.
St. Landry Sanitarium,
Opelousas, Louisiana.
St. Rita's Infirmary,
Opelousas, Louisiana.
Ruston-Lincoln Sanitarium,
Ruston, Louisiana.
Winnsboro Sanitarium,
Winnsboro, Louisiana.
St. Joseph Hospital,
Thibodaux, Louisiana.

ELIGIBILITY REQUIREMENTS FOR HOSPITAL
SERVICE THROUGH STATE HOSPITAL
BOARD FACILITIES

State Hospital Board Bulletin No. 1 gives the name and address of the private hospitals with which the State Hospital Board has an agreement for a limited number of beds.

The following eligibility requirements have been adopted by the State Hospital Board and must be strictly adhered to by Parish Departments of Public Welfare when certifying patients to any of the hospitals listed on State Hospital Board Bulletin No. 1 or supplements thereto.

AGE

No age requirement.

RESIDENCE

Residence requirements are the same as those governing eligibility for general assistance through the Parish Departments of Public Welfare. In other words, residence for assistance in the "Others" category.

INADEQUATE FINANCES

Any member of the group included in a grant of assistance through the various Parish Departments of Public Welfare shall be considered *prima facie* eligible because of inadequate finances.

Any person who, though not a recipient of public assistance through the Parish Departments of Public Welfare, or who is not included in a grant of public assistance, but who is eligible for assistance, or who may be properly included in a grant of assistance through the Parish Departments of Public Welfare, would be considered eligible because of inadequate finances.

PHYSICAL CONDITION

Because of limited facilities, the Parish Directors of the various Parish Departments of Public Welfare should certify for admission to the hospitals included in S. H. B. Bulletin No. 1 *only patients for whom there is on file a written statement by a competent physician stating that the condition of the patient is such that immediate hospitalization is required.* If immediate hospitalization is required for a person who is not a recipient of assistance or included in a grant of public assistance through a Parish Department of Public Welfare, but who is otherwise eligible, the patient may be admitted upon the advice of the competent physician, and the required social investigation can be completed by the certifying Parish Director after admission.

RESERVATIONS

Parish Directors should not send a patient to any State Hospital Board facility without first contacting the hospital, either by telephone or other communication, to make the reservation. *Under no circumstances should a client be sent to any one of the hospitals listed on S. H. B. Bulletin No. 1 or supplements thereto before ascertaining whether or not the patient can be accommodated.*

HONORARY ADVISORY COMMITTEE TO THE
STATE HOSPITAL DIRECTOR

Dr. George S. Bel, Member, New Orleans.
Dr. Lionel Bienvenu, Member, Opelousas.
Dr. Charles L. Brown, Member, New Orleans.
Dr. William H. Cook, Member, Baton Rouge.
Dr. O. P. Daly, Member, Lafayette.
Dr. Joseph A. Danna, Member, New Orleans.
Dr. Rigney D'Aunoy, Vice-Chairman, New Orleans.
Dr. Douglas Kerlin, Member, Shreveport.
Dr. Clarence Lorio, Member, Baton Rouge.
Dr. Jeff McHugh, Member, Baton Rouge.
Dr. James T. Nix, Chairman, New Orleans.
Dr. E. L. Sanderson, Member, Shreveport.
Dr. H. Vernon Sims, Member, New Orleans.
Dr. Robert Strong, Member, New Orleans.
Dr. F. F. Young, Member, Covington.

NEWS ITEMS

Dr. T. A. Watters addressed the Gulf District of the American Association of Medical Social Workers on Wednesday, December 15, at 4:00 p. m., on the subject of "Moods." The meeting was held in the Hutchinson Memorial.

Surgeon Harry E. Trimble has been relieved from duty at U. S. Quarantine Station, New Orleans, La., upon arrival of Surgeon F. A. Troie and ordered to proceed to Galveston, Texas and assume charge of U. S. Marine Hospital at that place.

On December 4, 1937, Dr. Isidore Cohn, Professor of Surgery and Associate Director of the Department of Surgery, Graduate School of Medicine, Louisiana State University Medical Center, delivered an address at the graduating exercises of the nurses at the Field Memorial Hospital, Centerville, Mississippi.

At the invitation of the Tri-County Medical Society, Dr. Cohn delivered an address in Brookhaven, Mississippi, December 14.

Dr. Charles A. Bahn, Director of the Department of Ophthalmology, Graduate School of Medicine, Louisiana State University Medical Center, presented a series of lectures at a meeting of the Southwestern Medical Association in Phoenix, Arizona, on November 18, 19, and 20.

Assistant Surgeon Paul T. Erickson was relieved from duty at the U. S. Quarantine Station, New Orleans, La., on January 3, 1938, and ordered to proceed to Seattle, Wash., and report to the Medical Officer in Charge, U. S. Marine Hospital for duty.

Assistant Surgeon Harris Isbell was relieved from duty at the U. S. Quarantine Station, Angel Island, Calif., on January 3, 1938, and ordered to proceed to New Orleans, La., and report to the Medical Officer in Charge, U. S. Marine Hospital for duty.

Dr. Ambrose H. Storck was elected to membership in the Southern Surgical Association during the recent meeting of that society in Birmingham, Alabama.

Dr. R. L. Gordon was elected president of the New Orleans Urological Society which held its annual meeting at the Hutchinson Memorial on December 16, 1937.

WANTED

The office of the Journal would like to have copies of the January and June, 1937, issues. If

you have any available, please send them to the office, 1430 Tulane Avenue; if that is not convenient, we will be glad to call for them.

APPROACHING MEETINGS

The Southern Section of the American Laryngological, Rhinological and Otological Society, Incorporated, will meet on January 24, 1938 at the Georgian Terrace Hotel in Atlanta, Georgia. The program will begin promptly at 9 a. m.

The fourth annual meeting of the Mississippi Valley Medical Society will be held at the Hannibal-LaGrange College, Hannibal, Missouri, September 28-30, 1938.

The officers of the American Public Health Association announce that the sixty-seventh annual meeting will be held in Kansas City, Mo., October 25-28, 1938.

Dr. Edwin Henry Schorer, Director of the Kansas City Health Department, has been appointed Chairman of the Local Committee. He will be assisted by a large group of city and state officials and community leaders.

A long list of affiliated organizations meet habitually with the American Public Health Association. They include:

- The American Association of School Physicians.
- The Association of Women in Public Health.
- The Conference of State Laboratory Directors.
- The Conference of State Sanitary Engineers.
- The American Association of State Registration Executives.

Delta Omega.

The International Society of Medical Health Officers.

SAN FRANCISCO AMERICAN MEDICAL ASSOCIATION MEETING JUNE 13-17, 1938

Members should write today if they contemplate attending the American Medical Association meeting in San Francisco this June and obtain their hotel reservations. See recent issues of the Journal of the American Medical Association giving list of San Francisco Hotels and rates. Send in your requests to Doctor Frederick C. Warnshuis, 450 Sutter Street, San Francisco, California, giving names of members of your party, type of accommodations desired, rates, date of arrival and departure.

The San Francisco Session promises to be an outstanding one by reason of the scientific program, scientific and technical exhibits and the social functions. In addition, there is the lure of California with its scenic beauty, majestic mountains, fertile valleys and historical background. An opportunity presents to combine profit of the

program with the pleasures of visiting San Francisco, the Golden Gate City with the two bridges, engineering wonders of the world.

Come by train, boat, auto or plane—no matter how—but come. Your visit will ever be one of pleasant memory. San Francisco and the bay area medical profession anticipate the pleasure of being your hosts and cordially invite you to come to the San Francisco Meeting.

Watch the Journal of the American Medical Association for program features and events.

The American Medical Golfing Association's Twenty-Fourth Annual Golf Tournament will be held in San Francisco, California, on Monday, June 13, 1938, at the San Francisco Golf and Country Club.

A "Golfers Special" to the A. M. A. Meeting is being sponsored by the American Medical Golfing Association. Six games of golf have been arranged on the trip to the Coast, in New Orleans, Houston, Galveston, San Antonio, Los Angeles and Del Monte; and three on the return journey through Portland, Seattle, Vancouver, Lake Louise and Banff.

For full particulars on the A. M. G. A. Tournament or the "Golfers Special," write the President of the A. M. G. A., Dr. Walt P. Conaway, 1723 Pacific Avenue, Atlantic City, New Jersey; or Bill Burns, Executive Secretary, 2020 Olds Tower, Lansing, Michigan.

SOCIAL HYGIENE DAY

National Social Hygiene Day, the second observance of which has been set for February 2, 1938 by the American Social Hygiene Association, marks the high point in the year round effort to gain popular interest and support for the activities of the health authorities and the medical profession in dealing with syphilis and gonorrhea. Interested official and voluntary agencies concentrate their efforts at this time on giving the subject the widest possible publicity, by arranging for meetings of interested groups, press stories and comment, appropriate radio broadcasts, and the like.

The first National Social Hygiene Day, February 3, 1937, was an immediate success in accomplishing its purpose: It was marked by hundreds of meetings held throughout the country. More than a thousand newspaper clippings coming from all parts of the country testify to its uniformly favorable press.

"Stamp Out Syphilis—Enemy of Youth" is the slogan for the 1938 Social Hygiene Day meetings. Particular emphasis will be laid on the control of syphilis among the twenty to thirty year age group, in which more than half of all new infections occur.

Suggestions for meetings and practical community program may be obtained from the American Social Hygiene Association, 50 West 50 Street, New York City. The Association will be glad to supply interested persons and groups with materials, such as exhibits, films, and literature.

THE AMERICAN BOARD OF INTERNAL MEDICINE

The American Board of Internal Medicine will hold its next written examination on Monday, February 14, 1938 in various centers of the United States and Canada.

The examination will consist of two sessions of three hours each with the morning session held at 9:00 o'clock a. m. and the afternoon session held at 2:00 o'clock p. m.

The candidates who are successful in this written examination will be eligible to take the practical examination which will be held the Friday and Saturday prior to the opening of the annual session of the American Medical Association in San Francisco in June, 1938.

The final date for filing applications for this written examination is January 15, 1938 and all applications should be in the office of the chairman before that date.

For further particulars and applications address: Dr. Walter L. Bierring, Chairman, American Board of Internal Medicine, Suite 1210, 406 Sixth Avenue, Des Moines, Iowa.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next examination (written and review of case histories) for Group B candidates who have filed applications will be held in various cities of the United States and Canada, on Saturday, February 5, 1938.

The general oral, clinical and pathological examinations for all candidates (Group A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13, and 14, 1938, immediately prior to the meeting of the American Medical Association.

Applications for admission to the June 1938 Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pa.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the

following summarized information: For the forty-fifth week of the year, ending November 13, there were 126 cases of hookworm reported, followed by 74 cases of syphilis, 45 of pulmonary tuberculosis, 36 of cancer, 35 of pneumonia, 19 each of diphtheria and gonorrhea, 16 of influenza, and 11 of scarlet fever. Of the unusual diseases one case of poliomyelitis was reported in each of three parishes, namely, Franklin, Rapides and Sabine; two were reported in Orleans, of which one was imported. For the week ending November 20, 116 cases of syphilis were listed. The following diseases then appeared in double figures: forty-three cases of pulmonary tuberculosis, 27 each of diphtheria and cancer, 25 of pneumonia, 21 of scarlet fever, 14 of malaria and 13 of typhoid fever. In this week, Caddo Parish reported two cases of tularemia. There were three cases of smallpox in Rapides and one case of poliomyelitis in East Baton Rouge. For the forty-seventh week, there were 193 cases of hookworm, apparently as a result of the hookworm survey. Syphilis came next with 58 cases; then followed 27 cases of cancer, 26 of pneumonia, 23 of diphtheria, 20 of pulmonary tuberculosis and 19 of malaria. This week two cases of poliomyelitis were reported from Orleans Parish, one of which came from a neighboring parish. For the week ending December 4, syphilis, with 99 cases, led all other reported diseases. There was a sharp rise in the incidence of pneumonia, 50 cases appearing this week. Cancer was third in the list with 31 cases, followed by 26 each of whooping cough and pneumonia, and 16 of diphtheria. This week Madison Parish reported one case of poliomyelitis. For the week ending December 11, there was a tremendous increase in the incidence of influenza. Evidently an epidemic had arisen in the state, because 323 cases were listed as contrasted with four for the previous week. Next in order came syphilis with 68 cases, followed by 60 cases of pneumonia, 36 of pulmonary tuberculosis, 33 of gonorrhea, 28 of diphtheria, and 25 of cancer. No cases of poliomyelitis were reported this week.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending November 13, 172 deaths occurred in New Orleans, of which 104 were in the white population and 68 in the negro. This contrasts with the previous week in which there were 140 deaths. The infantile mortality was likewise increased, there being 14 deaths in children under one year of age. For the next week, ending November 20, there was a drop to 150, divided 87 white and 63 negro; 17 deaths occurred in infants. For the week which closed November 27, the number of deaths had jumped again to 172; these total deaths were

divided 102 in the white and 70 in the negro population. There were 19 infant deaths. For the week ending December 4, of the 155 deaths listed, 109 were among white and 46 among negro persons, and 13 in the infant group. Following inclement weather in early December, the number of deaths jumped to 192 of which 117 were white and 75 negro. Infant mortality was practically the same as for the previous week. So far this year there have been 703 deaths in the City of New Orleans.

COMMUNICATIONS

December 7, 1937.

Paul T. Talbot, M. D.,
New Orleans, Louisiana

Dear Dr. Talbot:

In late September of this year I was approached by some one, a supposed executive representative of a motorists association of Birmingham, Alabama. He sold me a policy which is much like the contract of the American Automobile Association. This contract cost me fifteen dollars (\$15.00).

Since then I have reason to believe that this man is a faker and that I was "stung." Of course, the fifteen dollars (\$15.00) does not inconvenience me, but the idea of being "sold" sorely irks my conscience.

I am writing you so that you might mention this in the Journal for the benefit of other members of the society, and also to ascertain if you might know anything regarding the above association.

Very truly yours,

James H. Wells, M. D.

Dr. P. T. Talbot, Secretary,
Louisiana State Medical Society,
1430 Tulane Avenue,
New Orleans, Louisiana.

My Dear Dr. Talbot:

I have read with interest the copy you kindly sent me recently of the editorial in the A. M. A. Journal, November 27, of this year.

Personally, I am of the opinion, and I believe a large majority of the regular medical profession believe that any reforms or changes in the fundamental principles in the practice of medicine should come primarily from within the organization itself. Certainly, none others are more conversant with the ways, means, and necessities, for any organized movement to meet the responsibilities of the medical profession to the public. Furthermore, we have heard so much about the increased cost of medical care that I am constrained to write briefly some of my own reactions in regard to the assertion so often heard, that the

cost of medical service to the public has reached such a point that it has become burdensome. In the first place, we do admit that the cost of the care of the sick has notably increased, but the fault is not with the physicians themselves for the cost for their services has not been increased. The real increase has been due solely first, to hospitalization, and second, to better service rendered and demanded by and to the public, for within the last decade people have become more and more hospital minded. When a member of their family becomes ill they think of the doctor and hospital as one practically together, and if it is at all serious an ambulance is called and the patient is sent to the hospital for treatment. As a matter of fact, often they first go to the hospital and then call for their physician. In the old days the family and kindly neighbors did the nursing in their homes, thus with practically no extra cost to the patient. But now they demand not only first class hospital care and equipment but special nursing as well, all of which necessarily causes considerable increase in the cost of illness and somebody has to pay for it. So naturally it costs more, and the doctor himself only too often has to wait until the hospital expenses have been paid before he gets his remuneration, which is often either not paid at all or just when and what is left over after the hospital expenses have been met.

But the question is, how shall we meet this admittedly high cost of medical service? In my opinion we will have to meet that problem by dealing solely with the hospital side of the question, and I am glad to say that it is partially met here in Shreveport by an organization that will write hospital protection for the wage earner of the family that has proved satisfactory as far as it goes, by collecting a monthly payment from each subscriber, the subscriber in question selecting his hospital and physician of choice. However, the trouble is that this does not go far enough, for if this proposition could be extended to every man, woman, and child so that his hospital expenses are paid when he entered the hospital by previous small monthly assessments, then would the high cost of medical service be solved. The patient, of course, will be served, because his hospital bill is paid, the hospital, because the bill is paid more promptly, and the physician, of course, has a better opportunity to collect for his own services.

I submit the above for your consideration, for I believe this problem can be solved along the above line satisfactorily and of mutual benefit to all if it is properly approached in the interest of all concerned.

Sincerely yours,

J. C. Willis, M. D.

Dr. Anatole Raoul Trahan of Lafayette died on December 2, 1937. Doctor Trahan was born in 1870 and graduated from the Tulane University School of Medicine in 1892. He was a member of the Lafayette Parish and Louisiana State Medical Societies.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

CADDO PARISH

During a meeting of the Tri-State Medical Society in Shreveport in the month of October, the Woman's Auxiliary had the pleasure of entertaining the visiting doctors' wives. First, there was a luncheon at specially reserved tables for the weekly Junior League Style Review at the Washington-Youree Hotel. For this, there were eighty-five present, including both the local and visiting doctors' wives. On the following day, at the Shrine Club on Cross Lake, Mrs. E. L. Gill very charmingly reviewed "An American Dream" by Michael Foster. A buffet lunch followed. These special plans for the women were in addition to the banquet for both men and women at which the doctors were hosts.

At the regular November meeting of the Shreveport Auxiliary, which followed the weekly style review luncheon the program feature was a review by Mrs. Peachy Gilmer of A. J. Cronin's much discussed "The Citadel." Mrs. Gilmer referred to the book's disfavor in British medical circles, as well as the adverse criticism in the American Medical Journal. She herself, considers it a wonderful book that just misses being great literature because of its too apparent propaganda.

Only routine business was transacted.

The Woman's Auxiliary to the Shreveport Medical Society entertained with a delightful Christmas party at the Shrine Club in honor of the members' husbands. The club house was most attractive with its decorations in the holiday motif. Dinner was served at a U-shaped table. At intervals were plaques of red Christmas balls on silver doilies and red tapers burning in hurricane globes which were joined by a garland of pine, berries and other seasonable decorations. The place cards were Santa Claus bags filled with candy. Mrs. C. E. Rew presided, and the welcoming talk was made by Mrs. J. T. Crebbin; Dr. W. B. Heidorn responded to the greetings in behalf of the Medical Society.

After dinner, the guests grouped around a large Christmas tree and were presented with gifts by Santa Claus. This was followed by dancing.

Dr. and Mrs. Frederick Glynn Ellis announce the engagement and approaching marriage of their daughter, Dorothy Glynn, to Pike Hall Trichel, son of Mr. and Mrs. Milton Trichel. The wedding will be solemnized December 28 at eight o'clock in the evening at the First Presbyterian Church.

Mrs. J. L. Scales,
Publicity Chairman.

ORLEANS PARISH

IN MEMORIAM

Mrs. Edgar Hull
Died December 12, 1937.

The Woman's Auxiliary to the Orleans Parish Medical Society held its regular monthly meeting, Wednesday, December 8, at the Orleans Club.

Classes for auxiliary members have been started in public speaking and parliamentary procedure and are being very well attended.

The Chairman of the Tuberculosis Christmas Seals reported that her committee's work was completed and the stamps were in the mails the day after Thanksgiving.

Mrs. George Taquino, Chairman of the Southern Medical Association Ladies' Entertainment Committee expressed her very sincere thanks and appreciation to the ladies on her committees who helped to make this meeting one of the largest in the history of the organization.

A very delightful musical program was presented, the artists being graduates of Loyola School of Music. Tea was served.

Mrs. S. M. Blackshear,
Publicity Chairman.

SOUTHERN MEDICAL CONVENTION!

Attendance and entertainment reached peak levels in Auxiliary records at the thirty-first annual meeting of the Southern Medical Association held in New Orleans, November 30-December 3. From the moment of registration to the last evening's entertainment, the visitors were thrilled with the romantic atmosphere of the old French Quarter, delighted by tempting sea foods and Creole cookery, stimulated with the excitement of a well-matched golf tournament, honored with luncheons, teas and receptions.

The eventful year of Mrs. Frank Haggard's presidency of the Woman's Auxiliary to the Southern Medical Association was fittingly closed with the well-planned and efficiently administered New Orleans Convention. The choice of Mrs. George Taquino as general chairman of ladies' entertainment for the period of the convention was indeed a happy one, and to her, her committee members, and to each and every one of the New Orleans hostesses, the organization tenders its hearty appreciation.

Press and Publicity Chairman, please note!

Kindly send me monthly news of your auxiliary's activities for the Journal. I can always use it. Remember this for next month, please.

Mrs. Lucian W. Alexander,
Chairman, Press and Publicity.

BOOK REVIEWS

Chemical Procedures for Clinical Laboratories: By Marjorie R. Mattice. Philadelphia, Lea and Febiger, 1936. pp. 520. Price \$6.50.

This volume is presented as a handy, abbreviated laboratory guide. The methods described are given in sufficient detail to offer more than a bare outline of technic, so as to explain problems which may arise. An adequate presentation of biochemical principles involved serves as a background for the procedures considered.

The first part of the text is devoted to the

blood. The theory of acid-base balance and the interpretation of the laboratory tests employed to study acidosis and alkalosis are presented in a clear and understandable manner. All other blood chemical tests are described, even to magnesium and bromide determinations.

Another section takes up the biochemistry of the urine. An unusually thorough section is devoted to the analysis of gastrointestinal secretions. The appendix of the book contains much useful biochemical information.

This work may be recommended as a reference source to students in biochemistry and clinical pathology. However, it will best aid the practitioner who wishes a practical method selected with the details and working directions for any common or uncommon biochemical procedure.

MORRIS SHUSHAN, M. D.

A Brief Rule to Guide the Common People of New England How to Order Themselves and Theirs in the Small Pocks or Measels: By Thomas Thacher. Baltimore, The Johns Hopkins Press, 1937. pp. 54. Price \$1.50.

"A Brief Rule" is the first known medical document published in the American Colony and was issued as a broadside by Thomas Thacher, minister of the Third Church of Boston. Smallpox was raging in Boston at that time, and Thacher was required to serve in the capacity of medical advisor. Having had access to Sydenham's treatise on smallpox, published the year before in London, and probably having knowledge of the Latin version of Rhazes' description of the disease in 1498, Thacher compiled material to be used for the benefit of the suffering populace of the Massachusetts Bay Colony. Because there were only a few physicians, and these were inadequately trained, the publication of "A Brief Rule" was gratefully received.

In this broadside, smallpox is considered to be a disease in the blood, and its description and clinical course are given. Symptoms are divided into the "early, hopeful, doubtful, and deadly" that the attendant might formulate a prognosis in the given case. Only a few simple drugs are advised, and excessive therapeutics is to be avoided.

SYDNEY JACOBS, M. D.

Pharmacopoeia of the United States of America: First Supplement, 1937 Prepared by the Committee of Revision and Published by the Board of Trustees. Official December 1, 1937. Agent: Mack Printing Company, Easton, Pa. pp. 104.

This little volume marks the beginning of a new epoch in the publication of the U. S. Pharmacopœia. For eleven decades this work has appeared every ten years. The plan to issue an annual supplement originated with the present revision group. There was a time when there would have been little necessity for such action but in recent years the changes in drugs and drug usage have developed with such rapidity that a decennial revision of this standard text was proving definitely inadequate. The medical profession will welcome this innovation and will feel that the usefulness of the Pharmacopœia has been materially increased by this forward step.

O. W. BETHEA, M. D.

Pneumothorax Directory: Published by The American College of Chest Physicians, El Paso, Texas, 1937. pp. 34. Price \$1.00.

This is a small, well gotten up volume published by the American College of Chest Physicians to show which men in the state are giving pneumothorax. The purpose is, of course, to inform the peripatetic patient with collapsed lung where he can go for a refill when the time is ripe.

In Louisiana, three men are listed from New Orleans, one from Baton Rouge, and two from Shreveport as being in the habit of performing pneumothorax.

J. H. MUSSER, M. D.

The Roentgenologist in Court: By Samuel Wright Donaldson, A. B., M. D., F. A. C. R. Springfield and Baltimore, Charles C. Thomas, 1937. pp. 230. Price \$4.00.

Many splendid works concerning the general field of medical jurisprudence have appeared from time to time. While radiology has been considered in these, the relationship of the roentgen rays to the law has not been treated as a special subject. In this book the author has supplied this necessity.

As a general rule, the average physician is not interested in legal matters. Usually, he is as unfamiliar with the legal side of a case as the average lawyer is of the medical aspect. Quite frequently, the physician is summoned to court as a witness and is confronted with roentgen ray films and interpretation of them, which are introduced as evidence.

The author discusses such important subjects as: the relationship between physician and patient; malpractice; the law of agency; evidence and testimony; privileged communications; expert testimony; roentgen ray films as evidence; ownership of films; and physicians and contracts.

In each section he cites one or more cases illustrating legal opinions regarding the subject under consideration. These discussions add very much to the practical value of the book.

This work fills an urgent need for the physician interested in medico-legal work. It should be included in the library of every physician doing industrial surgery or radiology. It should prove of great value also to the members of the legal profession as it bridges a gap between the professions of medicine and law.

J. N. ANE, M. D.

The Avitaminoses: By Walter H. Eddy, Ph. D., and Gilbert Dalldorf, M. D. Baltimore, Williams and Wilkins Co., 1937. pp. 338. Price \$4.50.

The contribution appears to be the first comprehensive treatise in English on the pathologic

responses to the vitamin deficiencies. Each vitamin is discussed separately. The discussion in each case covers in order the chemical nature, function, deficiency, and the anatomic changes resulting from deficiency.

There is close adherence to the clinical aspect of the subject and yet the authors have included just enough experimental data to fascinate the clinician and serve as a valuable source of reference for both the investigator and the dietitian—truly a remarkable feature.

The ordinary attitude has been to side-step the enormous literature of this complex subject and this text seems to be what we have been looking for, a well qualified scientific, practical and stimulating discussion.

In our location, literally surrounded by vitamin deficiency, there is not a branch of the profession that can afford to overlook this valuable text.

R. H. BAYLEY, M. D.

Early Medieval Medicine: By Loren C. MacKinney, Ph. D. Baltimore, Johns Hopkins Press, 1937. pp. 247. Price \$2.75.

MacKinney divides his book "Early Medieval Medicine" into three parts: The first is a survey of medicine in Western Europe during the middle ages; the second, medicine in France during the Merovingian and Carolingian eras; and the third, medical progress at Chartres in the tenth and eleventh centuries. In addition to the text, there are several plates illustrating some of the manuscripts which served as source material, a complete index, and profuse notes. The total number of pages is 247, only 151 of which consist of text, the remainder being plates, notes and index.

The essay is a story of civilization, a picture of medical science in the making, from tales of miraculous healing to "hospitals" and cathedral schools. MacKinney presents the material in a simple, direct manner.

In the first part, the author discusses the changing modern concept of the so-called "dark ages" (476-1453). Historical research of the past decade or so indicates that the era was one of the great constructive periods in human activity. The dark ages are no longer dreary and dark, but vigorous and human. The book is concerned with that portion extending from the sixth to the eleventh centuries. In this period the author denotes two types of medicine, supernatural and human. The first was characterized by the reliance upon saints, relics, charms, incantations, and prayers for divine assistance. The second type by pharmacy, surgery (cautery, blood-letting, operations), urine analysis, and dietary regulations. The most noteworthy development in medicine was a shift of emphasis from the first to the

second type, that is, from superstition to intelligence. Also noteworthy was the changing attitude of the clergy toward medicine. In early medieval centuries the clergy actually opposed medical science, but after the seventh century, due largely to the advancement of the Christian principle of caring for the sick, the clergy began to dominate the field.

In the second part of the book, MacKinney discusses the origin of "hospitals" which in the early period were monastic infirmaries and hardly more than institutions for Christian charity. There is a brief discussion of medical literature, schools, and education. In his researches, Dr. MacKinney could find no evidence of the existence of medical schools in the modern sense of the word.

The third section concentrates upon Chartres, one of the foremost medical centers of the west. Here, in the cathedral schools, the first outstanding advances in medicine occurred and are revealed to us by the author.

In compiling this essay, MacKinney has escaped dilettantism by going to the very sources for his information. He has re-created the past in a style which makes charming history. MacKinney is a man of wide culture, a Doctor of Philosophy, and currently a professor of Medieval History at the University of North Carolina. As such he is probably able to write a more accurate history than a physician. It was through true merit, too, that he was asked to present this lecture, for, as he points out, the Noguchi Lectures have never before been given by one untrained in the medical profession.

ROBERT S. MUNGER, M. D.

Syphilis: The Next Great Plague To Go: By Morris Fishbein, M. D. Philadelphia, David McKay Co., 1937. pp. 70. Price \$1.00.

The appearance of this monograph is very timely because of the active campaign against syphilis. In stripping away the prudery by which the public press has hidden the word "syphilis" behind the vague term "social disease", this book's title makes plain to even the layman just exactly what is dealt with. Direct and accurate answers are given to questions regarding the cause, transmission, symptoms, laboratory diagnosis and the vastness of syphilis as a public economic problem. Treatment for ordinary, complicated and pregnant cases is outlined, with especial emphasis on the need for prolonged, continuous supervision by a physician. The layman is warned against quackery, which so often delays adequate treatment until too late for cure. Many lay readers will learn as a surprise that syphilis can be cured and that syphilitics may marry safely after adequate treatment. The laws in various states concerning the marriage of syphilitics are reviewed. In Louisi-

ana, for example, "as a condition precedent to the issuance of a marriage license, the prospective bridegroom must furnish a certificate, signed by a licensed physician, showing that the bridegroom has been examined and found free of venereal disease in a communicable stage."

Evidence is presented showing that education of the public is the greatest need at present in the United States in stamping out the plague of syphilis. Statistics are obviously incomplete because of the taboo about syphilis, but Fishbein states that the disease affects one out of every ten adults and that there are at least 681,000 *new* cases recorded yearly in the United States. Experience has shown, in the Scandinavian countries and Great Britain especially, that the incidence of syphilis can be tremendously lowered by sincere, continuous public campaigning against the disease which is a more dangerous menace to America's health than most other causes of death.

This book should be read by every physician. It should be prominently displayed in public and school libraries.

JOSEPH THOMAS ROBERTS, M. D.

A Textbook of Medicine: By American authors. Edited by Russell L. Cecil, A. B., M. D., Sc. D. Philadelphia, London, W. B. Saunders Co., 4th edition, 1937. pp. 1614. Cloth, \$9.00.

Since the publication of the third edition, a very thorough revision has been made in an attempt to bring the articles on every subject up to date. This attempt to give students an authoritative presentation of present day internal medicine resulted in the decision to establish a retiring age for contributors. Articles lost in this way are replaced by a large number of entirely new treatises on old subjects, usually written by relatively young university teachers who have made recent important achievements in the study of certain diseases. In addition a number of entirely new topics have been introduced, such as lymphogranuloma inguinale, pneumonia in children, meningococcal sepsis, spontaneous hypoglycemia, nephroses, and diseases of the peripheral vessels. Many articles cite references within the past year. The high standard of the articles in earlier editions has apparently been maintained. The sections devoted to infectious diseases, diseases of the kidneys and of the cardiovascular system are excellent. The section on diseases of the nervous system makes one of the best monographs on that subject of the present day.

An evident attempt has been made to use a simple, direct style of writing. A continuance of the widespread popularity which this volume has enjoyed in American medical schools is predicted for this new edition.

JOSEPH THOMAS ROBERTS, M. D.

The Principles and Practice of Clinical Psychiatry: By Morris Braude, M. D. Philadelphia, P. Blakiston's Son & Company, Inc., 1937. pp. 382. Price \$4.00.

This volume, well adapted and suitable for the times, is heartily recommended by reason of the fact that the author has placed between 382 pages, including 13 chapters, an index and the author's preface, a well balanced and intelligently planned text of neuropsychiatric ailments and their concomitants. A volume which could be used by medical students as a guide through the complexities of neuropsychiatric terminology and descriptive interpretation of psychoses, likewise it could be used to great advantage by way of explaining and also as an aid to understanding neuropsychiatric disorders. For the practicing physician it is excellent collateral reading and each particular disorder is exemplified by a case history. For the psychiatrist, especially those in teaching positions, it is well adapted to their use in transmitting to the student the plan set and the working formulas of the particular disease, explained under respective headings. It could be classed as one of the easily digestible medical volumes of clinical psychiatry from the standpoint of a neuropsychiatrist.

WALTER J. OTIS, M. D.

The International Medical Annual: Baltimore, Wm. Wood, 1937. pp. 605. Price \$6.00.

This series is now in its fifty-fifth year and is of value because it offers a brief resumé of the literature and new developments of the year of 1937. It reviews the progress made in the different branches of medicine, surgery and the specialties in the previous year. Each subject is reviewed by a man who has experience in that particular field.

The type is legible and a carefully compiled bibliography makes the work invaluable as a reference work of new developments.

It is especially recommended for the busy practitioner as it will enable him to keep up with the new ideas in the development of medicine.

J. M. CIARAVELLA, M. D.

A Textbook of Surgical Nursing: By Henry S. Brookes, Jr., M. D. St. Louis, C. V. Mosby Co., 1937.

The purpose of this text is to assist in coordinating the activities of the nurse and the physician by more thoroughly familiarizing her with various surgical conditions and by better preparing her with methods of surgical and nursing care. Although much of the text is written in classical textbook style in a rather abridged form, there are several instructive chapters on dressing room

technic, first aid, and routine preoperative and postoperative care. The chapters concerned with the various detailed routines of the operating division are excellently developed. The illustrations which, in the majority of instances, are borrowed from other sources are fairly good. Our only criticism is that possibly such a text should contain less classical description of disease processes and devote more space to the surgical activities of the nurse.

MICHAEL DEBAKEY, M. D.

American Red Cross First Aid Text-book: By American Red Cross. Revised edition, Philadelphia, P. Blakiston's Son & Co., 1937. pp. 256. Price, cloth \$1.00; paper \$.60.

With the establishment of First Aid Stations throughout the country by the American Red Cross, it behooves the profession to read this manual and to offer such criticism as may be useful in future editions.

The edition of 1937 covers the field of accidents thoroughly from abrasions and first degree burns through compound fractures and fractures of the spine. However, it does not point out that all apparent sprains should be treated with immobilization until fracture is ruled out by the physician or that patients with back injuries should be carried in extension, face down, until the responsibility of the patient is assumed by the hospital authorities.

The sections on resuscitation in drowning and electrocution could well be read by all ambulance interns.

Due to the fact that not a few people are sensitive to picric acid and its salts and that the material is explosive and inflammable, the reviewer believes that gentian violet might better be sub-

stituted in the section on the treatment of burns.
W. H. MEADE, M. D.

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P. Blakiston's Son and Company, Inc., Philadelphia: *The Endocrines in Therapy and Practice: Articles Republished from the British Medical Journal.*

Columbia University Press, New York City: *Concepts and Problems of Psychotherapy* by Leland E. Hinsie, M. D.

W. B. Saunders Company, Philadelphia: *Practical Proctology* by Louis A. Buie, A. B., M. D., F. A. C. S. *A Primer for Diabetic Patients* by Russell M. Wilder, M. D., Ph. D., F. A. C. P.

J. W. Stacey, Inc., San Francisco: *Bacteriology of Specific Communicable Diseases* edited by M. S. Marshall. *A Handbook of Accepted Remedies* edited by P. J. Hanzlik, M. D. *Atlas of Hematology* by Edwin E. Osgood, M. A., M. D., and Clarice M. Ashworth.

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Viking Press, New York City: *Doctors on Horseback* by James Thomas Flexner.

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TREATMENT OF CANCER AND PRE-CANCEROUS LESIONS OF THE VULVA*

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Until recent years, literature on certain diseases of the vulva, affecting chiefly women at or past the menopause was entirely inadequate and for the most part, misleading. Medical schools failed to teach much about such conditions as pruritus vulva, leukoplakic vulvitis and kraurosis and little was known of the histopathology of these conditions. Most physicians of today pass them up entirely too lightly, and fail to study these cases properly. For this reason, many cases are undiagnosed until they are in an incurable condition; particularly is this true of leukoplakic vulvitis and cancer. During the past few years, however, numerous articles on these subjects have been contributed and the etiology of cancer of the vulva has been fairly well established, revolutionizing the treatment of leukoplakic vulvitis and kraurosis, as well as cancer of the vulva. The purpose of this paper is not to introduce anything new, but merely to discuss the diagnosis and treatment of leukoplakic vulvitis, cancer of the vulva and chronic hypertrophic ulcerative vulvitis with a report of a few cases.

Chronic hypertrophic ulcerative vulvitis is a disease affecting the vulva of women at any age, usually in the early thirties. The etiology of this condition varies considerably. There is a high incidence of pre-existing syphilis. Some

authors have thought that tuberculosis causes the disease. Lymphogranuloma and granuloma inguinale have also caused this condition. Lack of cleanliness, profuse irritating discharge and gonorrhea have likewise been thought to have caused this condition. In the tropical countries, *Filaria sanguinis* produces this condition. The elephantiasis should not only be of the vulva, but one or both legs should be involved also. The fundamental factors common to them are: (1) blocking the lymphatic return; (2) profuse irritating discharge; (3) racial predisposition to skin hypertrophy, and (4) high incidence to pre-existing syphilis.

SYMPTOMS

A sensation of burning and rawness, due to ulceration. Usually there is a vaginal discharge and there may be incontinency of urine if the ulcer is attached to the urethra. Incontinency of urine is most likely to be present if fistulous openings are in the urethra. There is pronounced dyspareunia. The course of the disease is slow, but progressive. If pregnancy takes place, the complications are apt to be serious; septicemia is likely to follow delivery. Lacerations of a severe nature are common.

TREATMENT

Treatment should be instituted along the lines which would be better suited for the particular cause of the disease. Where syphilis is the cause, this line of treatment should be pushed to the limit. Where Donovan's bodies have been found and the diagnosis of granuloma inguinale has been made, tartar emetic in 10 c.c. intravenous injections has been used with some success. In suspected cases of tuberculosis, direct sunlight to the vulva is recommended. In addition to the actinic ray effect, the thorough drying out of the vulva skin will be beneficial. In some cases a thorough cu-

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

The pathologic diagnosis on all the cases presented in this paper was made by Dr. W. R. Mathews, Pathologist, Shreveport, Louisiana.

rettagage of the ulcerated area, followed by cauterization has been recommended. After all medical treatment has been used and failed and from three to five years have elapsed, surgery is the only treatment that will cure this condition. By no means would anyone recommend the use of radium or roentgen ray because the devitalized hypertrophic ulcerated tissue is very sensitive to irradiation and extensive burns will result.

CASE REPORT

R. H., colored, aged 41 years, gave the following history: In the early part of 1932, she began with a sore on the right side of the labium majorum, near the preputial fold. This was cauterized and local treatment instituted. The Wassermann was four plus with also a positive Frei test. She has had extensive antiluetic treatment for past three or four years, has also had tartar emetic. Her general condition is good. She has a retinitis, some hypertrophy of the heart with fibrillation. There is a fistulous tract in the urethra but the rectum is not involved. Vulvectomy was done on February 10, 1937; the wound healed by primary union. Pathologic report was as follows: "This is a granulomatous lesion. The cellular infiltration is composed mainly of lymphocytes and plasma cells and in places there is a rather marked foreign body giant cell reaction. In the subdermal area the aggregation of lymphocytes resembles somewhat lymph follicles. Productive inflammation is rather diffuse; consistent with chancre in lymphopathia venereum but not specific. It could be due to syphilis so far as the sections are concerned." (By: W. R. Mathews, Pathologist.)

Some authors classify leukoplakic vulvitis and kraurosis as one and the same disease. Other authors give an entirely different view. In my paper, I take it for granted that kraurosis is not a disease, but the result of a shrinkage of the vulva to such an extent that its elasticity is gone, and the vaginal introitus stenosed. Uncomplicated kraurosis is the result of a lack of ovarian and thyroid function. Leukoplakia on the other hand is the result of pruritus of the vulva and leukorrhea of long standing, accompanied by a low grade infection of the vulva. There is also a lack of ovarian function.

Most all patients suffering from leukoplakic vulvitis have leukoplakia patches situated on either side of the vulva and involving principally the non-hairy portions. Occasionally these patches are more pronounced on one side than the other, but for the most part, they are

symmetrically distributed. Frequently the anal skin is involved. Leukoplakic vulvitis is rare in the colored race although occasionally it is found. Pruritus is the predominating symptom, accompanied by burning, distress on urination and loss of sleep. The pruritus may be so intense, and the introitus so shrunken that sexual intercourse is impossible. For a complete histopathology of leukoplakic vulvitis, I refer you to the work of Taussig².

TREATMENT

Patients with leukoplakia with little involvement may be treated by local measures. Frequent examinations, however, should be insisted upon, to safeguard against cancer. As long as there is pruritus, treatment should be kept up. While you have reason to believe that you are dealing with an endocrine disturbance, particularly the follicular hormone, yet follicular medication has not proved to be of much value. Thyroid extract in certain cases is of immense value. Most patients, except those who respond to thyroid therapy, will slowly, but surely become worse. Surgery is the treatment of choice. Resection of the pudic nerve has been recommended to control the pruritus, and Counsellor reports some success with the procedure. For complete cure, extirpation of the lesion by vulvectomy is the treatment of choice, roentgen ray and radium having no place in its treatment.

CASE REPORT

Mrs. M. S., white, aged 79 years, gave a history of pruritus vulva for about ten years. In this case, a small dose of radium had been used some months before and there were ulcerated areas on both sides of the vulva the size of a fifty cent piece, with burning and itching so severe that sleep was impossible. A vulvectomy was done January 27, 1933, giving her complete relief.

Cancer of the vulva is not at all uncommon. Many authors give the ratio of cancer of the uterus to be about 20:1. They are relatively benign and the vast majority follow leukoplakic vulvitis. Occasionally, however, an epidermal cancer will arise from a syphilitic lesion. This particular type of cancer will be far more malignant than the epidermal cancer arising from leukoplakia. Cancer of the clitoris is a very rare disease, arising as a subdermal tumor and resembling sarcoma. I have not seen a primary cancer of the clitoris. Vestibular cancer about

the meatus usually arising from an old syphilitic process, involving the foreshea, is very malignant, and has a tendency to metastasize early. The Bartholin cancer has long been recognized as a particular type of cancer and like the clitoris cancer, arises from the subdermal tissue. It may be either squamous cell, arising from the duct, or glandular, springing from the gland itself. There is usually a history of pre-existing chronic infection of the Bartholin's gland. In looking for the etiologic factors in cancer of the vulva, Taussig has shown more than 50 per cent have leukoplakic background. In the colored race, particularly, a large percentage will develop on a syphilitic lesion. In my small series of four cases of cancer of the vulva, leukoplakic vulvitis was present in all, for a number of years.*

TREATMENT

The treatment depends on the general condition of the patient and the extent of the disease. It may consist of: (1) treatment by local measures; (2) irradiation; (3) surgery. It is the experience of practically all authors, that whenever possible, surgery should be employed, since it alone is the only hope for a cure. Practically all of these patients are extremely old, many are in bad physical condition and a great many are past all hope of cure. We are therefore forced to give some palliative measures, such as opiates and soothing lotions to the ulcerated vulva. Occasionally a destruction of the ulcer may be made by diathermy. So far as irradiation is concerned, it has proved to be a failure by practically all who have used it. Heyman, in 1931, reported 14 cases, treated from 1914 to 1923, with roentgen ray and radium with three cures. Boone treated 13 cases with radium, obtaining a four year cure in three cases. Giesecke treated five cases with roentgen ray and radium, but all died within five years. Tausch treated 15 patients with roentgen ray and radium with only one living five years. This patient died a few months

later with a recurrence. The explanation as given by Taussig and others for the bad results of cancer of the vulva treated with roentgen ray and radium is the relatively high incidence of radium resistant tumors and the ineffective results of roentgen ray upon the inguinal and femoral gland metastasis. Taussig contends however, that in epidermal cancer and in all tumors, showing a low malignancy index, irradiation is inferior to operation. On the other hand, with rapidly growing malignant tumors in younger individuals we are justified in employing radium, preferably gold radon seed to the ulcer, supplemented with deep roentgen ray therapy to both inguinal and femoral regions. As a supplement to surgery, some have recommended that radium may also be used in tumors that have begun to invade the rectal wall or the periosteum of the pubis. In every instance, where the urethra has become involved, treatment of this area with radium is preferable. Removal of the urethra is always followed by urinary incontinence.

In my report of four cases, two patients had received deep roentgen ray to the inguinal and femoral glands, prior to operation. In one patient the femoral and inguinal glands were resected by the method of Basset.

CASE REPORTS

Mrs. N. B., white, aged 66 years, gives a history of pruritus of 10 years. Biopsy shows leukoplakia. She was operated on January 6, 1933; wound healed by first intention. She has been well since that date. Pathologic report of tissue removed, shows squamous cell carcinoma, grade one.

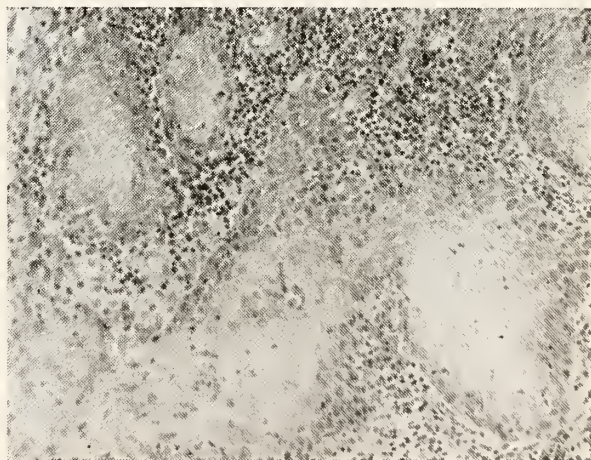


Fig. 1. The microphotograph shows squamous carcinoma grade 1.

*For a complete pathologic study of cancer of the vulva, I again refer you to the work of Taussig, "Malignant Tumors of the Vulva," found in *Obstetrics and Gynecology*, by Curtis, Vol. 111, page 599, and the Third Edition of "Neoplastic Disease", James Ewing, page 604, W. B. Saunders and Company.

Mrs. E. N., white, aged 58 years, had vulvectomy done November 6, 1933. Femoral and inguinal gland resection was done on right side. The ulcer on the right labium majus was about the size



Fig. 2. Shows carcinoma of the vulva before operation.

of a fifty cent piece. Pathologic report shows squamous cell carcinoma, grade two. Roentgen

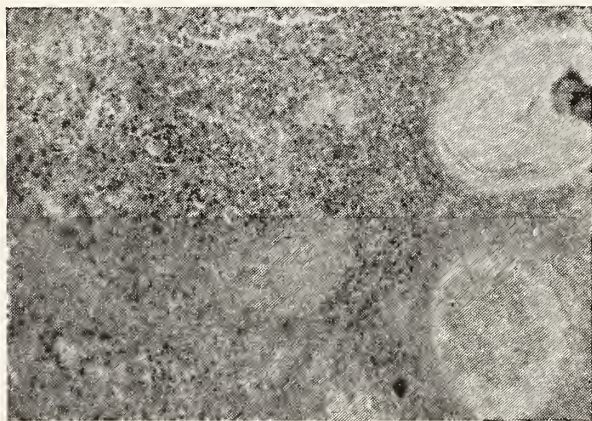


Fig. 3. The microphotograph shows squamous carcinoma grade 2.

ray treatment was given prior to operation. This patient is living and well today.

Mrs. E. B., white, aged 86 years, was operated on and the pathologic report shows squamous cell carcinoma, grade one. A partial vulvectomy was



Fig. 4. Shows squamous carcinoma grade 1, gross lesion.

done in March 1932. The patient returned in November 1933, with a recurrence. Radium was used on the vulva. Pulmonary embolism caused this patient's death 15 hours later. Even though the hospital records show that she died of



Fig. 5. Shows specimen after operation.

bronchopneumonia, her death was so sudden, I have every reason to believe it was a pulmonary embolism.

S. C., colored, aged 69 years, was operated on February 19, 1934. She expired a few days later

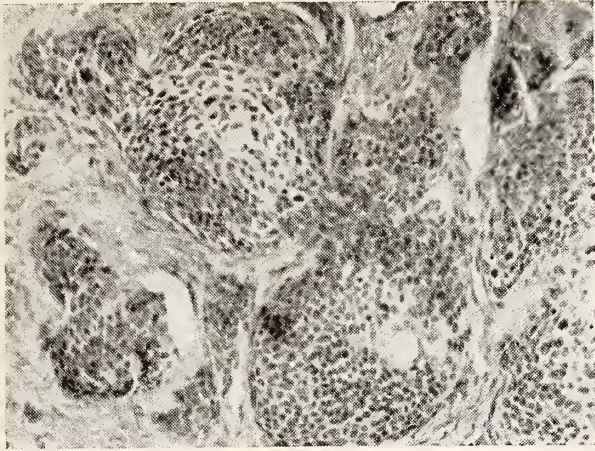


Fig. 6. The microphotograph shows squamous carcinoma grade 2.

from pneumonia following operation. Pathologic report shows squamous carcinoma, grade two.

Five patients were treated at the hospital by the most modern methods of roentgen ray and radium, during the spring of 1932 to spring of 1934, none of them are living today.

TECHNIC OF OPERATION

In doing the operation, after removing the involved skin, the posterior vaginal wall is loosened up as in doing a perineorrhaphy, after which an incision is made along each vaginal sulcus, so the vaginal mucosa can be drawn down over the perineum and attached to the upper margin of the anal mucosa with interrupted silk sutures.

The technic of removal of the tributary lymphatics described by Basset, has proved satisfactory in the hands of Taussig and others. A word about the anesthetic should be made. Since the duration of the operation makes it desirable for these old women to have the minimum amount of general anesthesia, it has been my custom to use an H. M. C. No. 1 or 2, followed by a small amount of ethylene gas. In dealing with these old women, it is well to pad the stirrups so that the popliteal vessels will not be contused. I am sure that one death from pulmonary embolism was due to trauma of the popliteal vein. (Mrs. N. C.) As a post-operative care, retention catheter is inserted for

the first 48 hours. It is well also to put the patient on a diet which will keep the bowels from moving for several days. Dry dressing should be applied for the first 24 hours. In removing the dressings, the stagnated secretions will be removed along with the dressings; this will to a large extent decrease the wound infection and necrosis. The wound should be kept uncovered, protecting it of course from the bed clothing by means of a wire frame. A lamp sufficient to keep the air warm and dry, is placed in the frame. Irrigations of some mild antiseptic twice daily are of considerable importance. While it is impossible to get healing by primary union, the necrosis and infection are reduced to a minimum. One need not fear the cutting of Poupart's ligament, since hernia is not apt to follow Basset's operation.

SUMMARY AND CONCLUSION

Since hypertrophic ulcerative vulvitis is apt to undergo malignant changes unless it responds to specific therapy, vulvectomy is the treatment of choice. Therefore, after a sufficient length of time has shown that this particular case will not respond to medical treatment, one should consider vulvectomy. Leukoplakic vulvitis appears usually in women shortly after menopause. The disease is rare in the negro race. It has been shown that more than half of the cases develop carcinoma. Pruritus is the most pronounced symptom. At least half of the cases likewise have an obliteration of the labial and preputial folds known as kraurosis. From a histologic standpoint, there is a loss of elasticity in the skin due largely to a deficiency of ovarian hormone. This defect in the elastic structure results in abrasions and cracks in the skin, hence the reason for pruritus vulva. The scratching increases the amount of infection. Therefore the chronic vulvitis thus produced, leads to keratosis and acanthosis. While this hyperplastic stage is produced fairly early, the atrophic stage takes place later. Cancer however may develop during the hyperplastic stage, or later during the atrophic stage. Treatment should consist of a complete vulvectomy. This will cure the patient of pruritus vulva and immediate relief from symptoms follow. Aside from curing the pruritus, she is free of a precancerous lesion. In dealing with

cancer of the vulva four distinct types are shown:

1. Epidermal, springing from the vulva skin, where leukoplakic patches exist.

2. The clitoris, very rare and highly malignant. This tumor is of subdermal origin and resembles sarcoma.

3. Vestibular cancer, arising from the vaginal introitus, usually in the young and from syphilitic ulcers.

4. Bartholin gland cancer, one usually finds a history of chronic infection in the glands.

All of the cases of cancer which I have treated have arisen from the epidermal skin, and all showed leukoplakia. Two of my four patients are living after four years and are well. One expired from pulmonary embolism at the age of 86 years. (Charity Hospital diagnosis—bronchopneumonia). One expired from pneumonia several days following operation.

While I am of the opinion that the double-sided Basset's technic of gland removal together with vulvectomy is the operation of choice, I followed this procedure in only one case. Treatment of cancer of the vulva by radium and roentgen ray therapy has been very unsatisfactory by all who have tried it. Burns readily occur which are most annoying and painful. Surgery alone is to be considered unless the patient's physical condition makes this impossible.

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DISCUSSION

Dr. Harold G. F. Edwards (Shreveport): I have listened to Dr. Rigby's paper with considerable interest. There are one or two points I want to correct in the last statement which he made. In the Tumor Clinic of the Shreveport Charity Hospital we have had 14 cases of carcinoma of the vulva. As he pointed out they are all in elderly women. He made one statement which I want to take exception to: "That in those treated by modern radium and roentgen ray not one is living today". I want to point out that three patients treated by combination of radium and roentgen ray are today living and free from the disease. I also want to call his attention to the fact that a patient 70 years old treated for carcinoma of the vulva, a very anaplastic epidermoid cancer and one which Dr. Mathews reported would be radio-sensitive, was treated by high voltage alone in December 1933; and we had a letter from her this year in which she states she is living and well and free from the disease.

It is well known that the patients coming to the Shreveport Charity Hospital are received in an advanced stage of the disease. I do not say that vulvectomy is the method of choice. In fact, I do not know of any one method of choice in malignant disease. When some one tells this audience vulvectomy is the method of choice, he is not familiar with radiation in properly selected cases. What are you going to do when the disease has invaded the ischiorectal fossa?

The patients in whom he reported radium being used, I simply wish to remind him that in the two patients who died, all had vulval surgery. The one who died from a pulmonary embolism had a postmortem examination, and there was a well organized clot in the popliteal vessel, which we believe came as the result of the old woman being put in stirrups, and not as a result of radium. The second woman who died of pneumonia was an old woman who had partial vulvectomy done one year previous and there was marked recurrence. In fact, the recurrence was larger than at the time of partial vulvectomy. This woman was so feeble that she was treated with a radium pack. I would say that a pack is simply the proper distribution of radium on a wax mold and is laid on the tumor, and from the fact that she was aged, she developed pneumonia and died.

We do not attempt to treat by any one method. We treat by the method giving the best results, whether by surgery or radium. We have used the

combination of radium and surgery. We have used radium in carcinoma of the vulva which originated in a leukoplakic base, and later performed vulvectomies because we recognized that radium or roentgen ray will not cure leukoplakia.

Dr. E. von Haam (New Orleans): I am very much interested in these cases and question whether we are ever able to differentiate the cause as lymphogranuloma or syphilis. One of the difficulties is because the patient may have a positive Wassermann and Frei reaction and a local growth which resembles lymphogranuloma inguinale. We see more cases of involvement of the female urethra in lymphogranuloma inguinale than in syphilis. The female urethra is the origin of many of the lymphogranulomatous growths. The differentiation can be made by animal experimentation. In syphilis, primarily, the capillaries are involved, while in lymphogranuloma inguinale the lymph vessels are involved, and we just have to study the accumulation of the inflammation itself. If around the lymph vessels, we are more liable to make the diagnosis of lymphogranuloma; if the inflammation is around the small capillaries with thickening of the large vessels, syphilis. In both cases, the inflammatory cells seem plasma cells.

Dr. W. R. Mathews (Shreveport): Dr. Rigby referred to the local conditions of the vulva which are related in a causative way to epithelioma. Of these, pruritus and leukoplakia are the most important. Both clinical and pathologic observations indicate that the majority of primary malignant tumors of the vulva are antedated by these conditions. This would appear to imply that vulvectomy or partial vulvectomy in cases showing these lesions would prevent a good per cent of cancers of this organ. It should be noted that one cannot always determine on clinical features alone whether or not there has been malignant transformation in leukoplakia. Before planning treatment a biopsy should be taken from the most suspicious area or areas and, in case the inguinal nodes are enlarged, an aspiration biopsy should be performed on these. A positive aspiration from a node indicates immediately the full scope of the therapeutic problem. Multiple negative aspirations from a suspected node constitute strong, but not absolute, evidence against metastatic malignant disease.

In ulcerating cancers a severe infection is often present which complicates local conditions and accelerates the progress of the tumor.

Metastases to the regional nodes have been observed as early as three and a half months from the beginning of the disease and have been delayed for more than three years. Lymph node involve-

ment is present in probably fifty per cent of the cases in the second six months of the disease.

The course of vulval cancer in the majority of cases is rather rapid and terminates as a rule, if untreated, within two years after detection of the lesion. The rapidity of its course is probably due to the rich lymphatic and vascular supply of the tissue and, in some instances, undoubtedly to a complicating infection. However, there are many cases in which the first stage of the disease is slow and several years may elapse before metastases develop. In cases with lymph node involvement the prognosis is decidedly unfavorable, regardless of the type or extent of treatment. If a survey of the full statistical data be made I doubt if much over five per cent of the cases with metastasis to the nodes would be found free from recurrence for a period of five years or more after treatment.

Dr. Rigby (In conclusion): I appreciate very much the discussion of my paper by Drs. von Haam and W. R. Mathews. The only cases I refer to in my article are cases which were treated for cancer of the vulva at the Charity Hospital, Shreveport, Louisiana, from 1932 to 1934. There were nine cases of cancer of the vulva during this time, four of which were placed under my care for treatment, the other five were treated by the radiologic department and were not subjected to vulvectomy. These patients were treated prior to my leaving the service of the Charity Hospital and are as follows:

N. C.: (White)—Admitted 7/2/32, Hospital No. 225952; diagnosis—squamous cell carcinoma, grade 2. Expired 7/16/32.

R. W.: (White)—Admitted 6/5/33, Hospital No. 232470; diagnosis—epidermoid carcinoma, grade 3. Expired 5/21/34.

C. W.: (Col.)—Admitted 2/18/33, Hospital No. 242622; diagnosis—epidermoid carcinoma, grade 3. Expired 9/29/33. (Vulva removed by endotherm—roentgen ray treatments).

J. B.: (White)—Admitted 7/16/34, Hospital No. 254095; diagnosis—epidermoid carcinoma, grade 2. Expired 11/7/35.

D. M.: (Col)—Admitted 12/1/33. Clinic No. 839; diagnosis—epidermoid carcinoma, grade 3. Has not been heard from since 2/27/35.

The pathologic diagnosis on all of the above cases was made by Dr. W. R. Mathews, Pathologist, Shreveport Charity Hospital. A copy of the above charts was given me by the stenographer and there should be no mistakes as to the outcome of the cases.

THE TREATMENT OF CARCINOMA OF THE PROSTATE*

EUGENE B. VICKERY, M. D.
NEW ORLEANS

Review of the literature on prostatic cancer is generally discouraging. There are but few urologists who make an attempt at cure by radical prostatectomy, and these men estimate that only 5 to 10 per cent of the carcinomas are suitable for such an operation when they first see them.

This disease, in the majority of cases, originates in the posterior lobe of the prostate, and usually has extended well beyond the gland before symptoms bring the patient to examination. Most of the early ones are discovered in the course of a routine physical study. The great majority of cancers of the prostate occur after the age of sixty; in other words, it is a disease of late declining years.

Recent observations by Rich and Moore, working independently, show that the incidence is much higher than is generally recognized. Rich reports finding carcinoma in 14 per cent of all men 50 years or more in age, on routine section of the prostate in 292 consecutive autopsies. He states that a more thorough search would doubtless show more of these tumors. Moore made a section from each block of an individual prostate which had been divided into regularly spaced blocks, and reports an incidence of 20 per cent in men over 41 years of age from a series of 252 autopsies.

Most urologists feel that many prostatic

cancers grow slowly, but the rate of growth is unpredictable. This feeling is borne out by the findings of Rich and Moore when we note that the death rate from cancer of the prostate is only 1.5 per cent of the total cancer mortality, and in 1934 the total deaths in the United States numbered 6,578.

The average incidence and this often-noted tardiness in growth argue against radical prostatectomy for cancer, as it is a formidable procedure carrying a fairly high mortality rate, and fraught with the possibility of postoperative incontinence. The wisdom of such a course is debatable, and yet the radical operation would seem indicated in an individual who apparently has a life expectancy of many years, if the cancer can be eliminated. The slow-growing characteristic of prostatic cancer also makes one wonder how long these small tumors might persist without symptoms if let alone, and how many cases of "five-year cures" are really cures.

Below is a table of results reported from radical perineal prostatectomy. (It is generally conceded a radical suprapubic is impossible.)

TABLE I
IMMEDIATE RESULTS FROM RADICAL PERINEAL PROSTATECTOMY

Author	Cases	Hospital Mortality Per Cent	Incontinence
Young	61	11	Not stated
Smith, G. G.	50	10	Partial—16% Total —16%
Belt	25	8	Not stated
Rolnick	12	?	40%

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

TABLE II
ULTIMATE RESULTS OF RADICAL PERINEAL PROSTATECTOMY

Author	Cases	Living over		Died after		Died in	
		5 yrs.	5 yrs.	5 yrs.	5 yrs.	Living less than 5 yrs.	less than 5 yrs. after operation
Young	61	7	9			Not stated	5
Smith, G. G.	50	4	8	(6 showed cancer)		10	23 (19 showed cancer)
Belt	25	3	1 showed cancer			10	7
Rolnick	12	0	0			5	6

DIAGNOSIS

Definite diagnosis of the nature of a small lump in the prostate by rectal palpation is impossible. Roentgen rays will eliminate stone. Barringer and Ferguson advocate aspiration biopsy through the perineum with a long sharp needle, getting 80 per cent results, but other workers have not found this method of great help. Young and others doing radical prostatectomy expose the prostate by perineal section and do a biopsy. Occasionally a biopsy may be obtained from the urethra.

RADIATION THERAPY

Barringer, Ferguson and others have had much experience in radiation therapy. Barringer uses long needles containing radium, introduced into the prostate and seminal vesicles through the perineum. This is combined with deep roentgen ray therapy given from five different portals in small early lesions. When lesions are more extensive, he uses radium introduced with regular spacing into the prostate after the obstructing portion has been trimmed away by suprapubic approach. This is combined with deep roentgen ray therapy later. Barringer states that 8 per cent of 322 cases have been "controlled" from three to 17 years by such radiation. Bumpus, in 1926, reported 122 cases treated with radium with an average life of 22 months afterward. Four were living more than five years. Belt is encouraged by the progress of patients exposed to extremely high voltage roentgen ray therapy, but sufficient time has not elapsed to evaluate ultimate results.

PALLIATIVE MEASURES

Most workers have adopted the plan of letting prostatic carcinoma alone until it causes enough distress to warrant measures for relief. This, of course, is the only thing that can be done for the great majority who present themselves after they are beyond the possibility of having more radical procedures carried out. Many of the patients when first seen have already acquired bone metastases. A good many palliative procedures have been used for relief of obstruction, and I list them below.

Palliative Measures for Relief of Obstruction:

1. Intermittent catheterization.
2. Suprapubic cystostomy.

3. Suprapubic prostatectomy.
4. Partial perineal prostatectomy.
5. Radiation therapy.
6. Transurethral resection.

For a limited number of cases, use of the catheter is fairly satisfactory, and the patient may live for some time under this regime. Suprapubic cystostomy has been employed by many surgeons as the best relief, and it carries a low operative risk. Bumpus in 1926 concluded that it was probably the most satisfactory measure employed at that time. He reviewed 178 cases of prostatectomy by both suprapubic and perineal route, and found 17 living more than five years. The average length of life was 30 months. One hundred and twenty-five cystostomies gave an average life of 24 months, and six were living more than five years. Hammond in 1933 still felt that cystostomy was the proper method.

However, a great many patients lead a more or less miserable existence with a suprapubic tube, and if it is possible to give them a functional bladder they are much better satisfied. This is a difficult procedure by both the suprapubic and perineal routes, but more easily performed by the latter. Since the advent of commonly-done transurethral resection a great many operators believe this less formidable procedure is the one of choice. Below is a tabulation of twelve cases in which this procedure has been done. These patients were operated on during the period between July 1932 and April 1935. Two years have elapsed since the last. All but four of these patients had acute retention of urine. The four who did not had residuals of 8, 9, 12 and 15 ounces.

The average postoperative period with a comparatively comfortable bladder function is 23 months, if one does not take into consideration the patient who evidently had a cardiac or embolic death seventeen days after resection. Cases 4 (R. W.) and 7 (J. E. R.) both had a grade two malignancy. They are both comfortable, have no urinary infection and their weight is normal, but rectal examination reveals a slowly extending stony hard mass. Case 8 (H. M. S.) had two resections before he was seen, and was quite uncomfortable. He gained sixty pounds following resection and held this weight until

TRANSURETHRAL RESECTIONS FOR CARCINOMA OF PROSTATE

Case	Age	Date of Operation	Months with Functional Bladder	Alive	Died
T. S. G.	62	July 1932	20 months	Second resection	-----
S. M.	70	August 1932	6 months	-----	March 1933, of metastases.
L. H.	52	September 1932	25 months	-----	October 1934, of heart disease.
R. W.	65	September 1932	55 months	Comfortable	-----
J. A.	73	January 1933	18 months	-----	July 1935
E. C. T.	67	May 1933	20 months	-----	November 1935— uremia.
J. E. R.	55	January 1934	39 months	Comfortable	-----
H. M. S.	62	October 1934	23 months	Second resection September 1936	-----
W. H. S.	57	November 1934	12 months	-----	November 1935. Bladder comfortable
D. J. W.	63	January 1935	21 months	Suffering from obstruction	-----
J. D.	56	April 1935	12 months	-----	April 1935, of metastases. Bladder comfortable
J. B. C.	70	April 1935	0	-----	17 days after opera- tion, suddenly.
Average:	63		23 months		

a second resection 23 months later. This illustrates the necessity of removing all obstructing tissue.

All of these cases were resected with the Braasch-Bumpus resectoscope. Carcinomatous tissue is trimmed away with more ease than benign tissue, and there is usually less attendant hemorrhage. Whenever subsequent resections have been done, a generally contracted posterior urethra has been encountered, and this is difficult to trim out. Passage of large sounds for this condition is beneficial.

SUMMARY

There is no doubt in my mind that transurethral resection when properly done gives the patient with malignant prostatic disease great relief without extensive surgery, and it can be repeated whenever it becomes necessary. While this is too small a group of patients from whom to draw any definite conclusions, it is evident that a satisfactory resection offers them one or more years of fairly comfortable bladder function. At the present time I am using deep roentgen ray therapy as a postoperative measure. It is also recommended in those patients who have discomfort when there is no residual and infection does not seem to account for it.

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DISCUSSION

Dr. W. A. Reed (New Orleans): Malignancy of the prostate, just as with malignancies elsewhere, are apparently on the increase, but it may be that this is due to the fact that the average span of life is several years longer than it was 50 years ago, thereby adding a few more years to the cancer period of life. Prostatic malignancy is a problem that affects not only the urologist but all the other allied branches of medicine as well.

First, I would like to call your attention to the fact that as yet the examination of the prostate per rectum should be a part of every physical examination equally as much as an inspection of the mouth and throat for dental infection or diseased tonsils, or the determination of blood pressure.

Carcinoma of the prostate is absolutely painless until it has penetrated the capsule and involved the periprostatic area or metastasized to other parts of the body. And, too, there frequently is very little urinary disturbance in spite of a prostatic malignancy that is readily detectable by the sense of touch. As Hertzler expresses it "The density of carcinoma to the finger that has felt much, is the most reliable evidence in medicine. The surgeon's eye may betray him, his ear bear him false witness, but the educated touch, attuned to the feel of epithelial malignancy, remains his faithful servant always."

Therefore permit me to urge each one of you that this simple procedure be carried out on every male patient that you are called to see. By so doing you will only too frequently find why your patient failed to regain the weight he recently lost in spite of the fact that he had taken for months an excellent iron and vitamin tonic prescribed by a reputable physician in an adjoining city, or why his backache failed to respond to the latest approved sacro-iliac belt.

Furthermore, the early detection of a suspiciously hard area or nodulation in any portion of an enlarged prostate, except just beneath the capsule, in an individual in his early sixties, may at this stage permit of a complete enucleation of the

adenomatous portion of the gland, along with the malignancy. If, in such a case, a metastasis has not yet occurred, a complete and radical cure is very frequently obtained.

Not long ago I spent sometime at Johns Hopkins where I was amazed at the demonstration of a large series of slides that were made from ordinary senile prostates that had been removed in toto, and in none of which was there any demonstrable evidence of malignancy. Serial sections through the entire gland showed definite central malignancies in 25 per cent of them. Therefore one in every four or five male patients with enlarged prostates has some malignant change already existing in the gland.

This simple fact alone is enough to cause me, as well as many others, to maintain that the old time suprapubic or perineal prostatectomy still must be considered when one is dealing with large glandular hypertrophies. However, when faced with an advanced prostatic malignancy, where the gland is comparable to so much reinforced concrete surrounding the valley of the posterior urethra, the procedure outlined by Dr. Vickery is the one to be selected. It makes the remaining years of life of these poor unfortunates comfortable in a way that no other procedure will do. When and where a resection cannot be carried out the next best method of choice, of course, is a permanent suprapubic cystotomy.

The final decision as to which of the two procedures to use depends on many things, paramount among which is the availability of a capable resectionist as well as the general condition of the patient.

Dr. U. S. Hargrove (Baton Rouge): Prostatic disease has been widely publicized recently, and the public is prostate conscious.

I feel that one of the high spots in Dr. Vickery's paper was his remarks on radical removal of malignant glands. Radical removal is quite an extensive piece of surgery, and carries a very definite operative mortality, and an even greater morbidity, as shown in the large number of cases of incontinence following this operation. One surgeon quotes incontinence in 50 per cent of all cases surviving the operation; another admits 32 per cent.

Dr. Vickery states that in a series of autopsies on patients dying from all causes, 15 per cent showed postmortem carcinoma of the prostate, but only 1½ per cent of carcinoma deaths only, (not including other causes of death), were due to carcinoma of the prostate. That leaves a tremendous difference between the number of men showing carcinoma of the prostate at autopsy, and the number dying because of carcinoma of the prostate. Therefore I feel that to subject a man to the ex-

tensive operation of radical removal, with its high mortality and high incidence of incontinence, is rather increasing his chances of death instead of decreasing them, and does not strike me as good treatment.

I am going to quote from Hinman, whose statements probably express the consensus of opinion: "A few urologists of experience doubt the cure of any case by any method. No one has cured a case by radium or roentgen ray. The majority devote their efforts to the postponement of death. Only a few men can give proof that early diagnosis and radical removal will cure. Nevertheless, until that time when the cause of cancer is known and a specific discovered, radical surgery is the only cure. Unfortunately, it is very rarely applicable. Insidious and slow growing cancer usually has spread beyond the hope of radical removal when discovered." Therefore in carcinoma of the prostate, a great many resolve the question into one of symptomatic treatment.

There are two main symptoms from which the patient desires relief: One is pain, due to pressure on pelvic nerves; the other is difficult and painful urination. I think we should direct our efforts towards relief of the most prominent symptom. Deep roentgen ray is effective in quite a number of cases in relieving pain, although not so in relieving urinary difficulties. For pain then we can use deep roentgen ray, sedatives and narcotics. For relief of urinary difficulties, we can use transurethral resection and the suprapubic tube. Until a better method of treating carcinoma of the prostate, as well as other carcinomas is advanced, I believe that is the status of the situation.

Dr. M. H. Foster (Alexandria, La.): The history of prostate cancer was developed in five periods: (1). The period of darkness, when nothing was known about it. (2). The period of accurate pathologic diagnosis, when it was definitely separated from other morbid prostates. (3). The period of partial, and radical surgical attack. (4). The period of irradiation, when it was attacked by roentgen ray and radium. (5). The period of attack by irradiation and surgery combined.

Histologically, prostate cancer shows a pronounced tendency to occur in the posterior lamella, or that portion of the gland nearest the rectum, and most accessible to the palpating finger. Occasionally malignant areas may be encountered isolated within a previously developed hypertrophy.

For purposes of clinical diagnosis, Pousson (1914) mentions two varieties: First, small circumscribed prostate, often smaller than normal gland; second, carcinose prostata-pelvienne of Imbert (1904), large, diffuse, may completely infiltrate both vesicles, extending beyond the reach

of the palpating finger superiorly, and the urethra inferiorly, filling the bottom of the pelvis. Both are hard, nodular, infiltrative, adherent, fixed, and tend to present abrupt, precipitous, and overhanging edges.

Treatment by radical surgery had been attempted by Leisrink, Czerny, Fuller, Kuster, and Harris before the present century, always with fatal results, the few who survived the operation dying of early metastasis. Young first employed carefully planned and systematised radical removal in 1904. His early cases survived the operation, but all were incontinent. In 1914 he claimed that by his new technic, he was obtaining perfect urinary control in almost every case. Because of the patient's delay, or the doctor's neglect to consider early diagnosis of cancer, permanent cures resulted in but 5 per cent of the cases.

Konrad Roentgen discovered roentgen rays in 1895, and Madame Curie, radium in 1903. Lumeau (1907), Minet (1908), respectively, were the first to employ these modalities in the treatment of prostate cancer. Deming (1922) claimed relief from dysuria in 75 per cent, metastatic pain in 50 per cent, recession in size in 55 per cent of diffuse, inoperable cancer, when treated with radium.

Electro-surgical resection was first presented by Stern (1926).

For reasons as yet inadequately understood, cases are sometimes encountered which resent attacks by radium, and by the trajected conversive heat effect of electro-surgical resection, by a rapid and vicious flare up of malignant activity. This vicious response seldom follows deep roentgen ray, and has not been reported after transurethral removal of bladder neck obstructions with the cautery punch. Both appear to exert a subduing and retarding influence upon the clinical progress of the malignancy.

When small contracted prostates are surgically enucleated, experience has shown that bars, bands, contractures usually remain, and that urinary obstruction persists. This caused Young to take up the punch about 30 years ago. With it he removed a few wads of tissue from the bladder neck and definitely cured the obstruction.

In prostatopelvic carcinoma, metastasis has occurred; the hazard is grave, radical surgery not feasible. Bladder drainage is first provided, the mass is shrunk by deep roentgen ray with Coutard's technic, then after a suitable period for congestion to subside locally, and for the patient to make a constitutional come-back generally, all obstructing tissue is removed from the bladder neck with Caulk's cautery punch. Comfortable urination is obtained, and catheter drainage is immediately dispensed with.

Examination of tissue which we have removed thus, still shows the presence of cancer cells, so we are unable to report laboratory cures at present. We do have many old men who are living without clinical recurrences, healthy, happy, and urinating comfortably, anywhere from a few months to 12 years after the cautery punch operation.

Relief of bladder neck obstructions by transurethral punch is not a new idea. It was first attempted probably by Guthrie (1834), also by Mercier (1836), and Bottini (1874). Young did the first transurethral punch operation in America, with an instrument of his own construction, March 29, 1909. John Caulk announced his cautery punch in 1919, and with slight improvement by Kackley, it remains the safest and most satisfactory instrument for removing bladder neck obstructions. There is no mortality inherent in the procedure itself. The anesthetic is either twilight, or 50 mgm. (or less) of novocain in the spinal canal. The patient may leave the hospital in three days, enjoying full physiologic urination. Those who have never troubled to acquire skill and efficiency in the use of this instrument, will be surprised at the amount of tissue which can be removed with it. Mortality is negligible. Morbidity is trivial.

Dr. R. F. Sharp (New Orleans): On the urological service of the L. S. U. Medical Center, Charity Hospital, we have been doing prostatic resection since 1932. We have used exclusively the McCarthy resectoscope and the Davis-Bovie electrical unit. This method has left little to be desired as regards its cutting and hemostatic ability. We have found, as a general rule, that our cases of carcinoma of the prostate stand prostatic resection better than the adenomas. This, I believe, is due to the fact that there is less bleeding in the carcinoma cases, less absorption by the remaining portion of the prostate gland and the removal of smaller amounts of tissue.

Following prostatic resection, the carcinoma patients enjoy a period of comparative comfort, varying from a few months to a few years. The most common complaint is a frequency and urgency of urination. Incontinence has been infrequent, except in those patients suffering from this complaint before resection.

We have had a few patients who had to be resected a second time due to a recurrence of the obstruction. I have found that they tolerated the second resection better than the first. Compared to suprapubic cystotomy, they are far more comfortable and less trouble to themselves and their doctor. Of course neither prostatic resection nor suprapubic cystotomy offers any hope of cure for these unfortunates. Complete prostectomy by the perineal route provides the best chance of cure.

But as Dr. Vickery has so well shown by compiling the statistics of the leading perineal prostatectomists in this country, the ideal cases are few, the mortality high and the recurrence of the malignancy too frequent.

However, in ideal cases where an expert operator is available, this is the method of choice. We have not been doing perineal prostatectomies on our service. For all other cases of carcinoma of the prostate, the method of choice is prostatic resection and may be supplemented by radium or deep ray therapy if so desired.

CONGENITAL MALFORMATIONS OF THE RECTUM AND ANUS AS A CAUSE OF CONSTIPATION*

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The completely obstructing congenital anomalies of the lower intestinal tract, as imperforate anus and absence of anus or rectum, command immediate attention in the neonatal period. Less spectacular, and therefore less easily recognized, are the many instances of partial occlusion of the recto-anal canal by congenital malformations, which may produce persistent constipation, and a long train of ills, including fissures, fistulas, peri-anal abscesses, fecal impaction, dilatation of the colon and other associated phenomena. These difficulties are usually manifested during the period of infancy, but may persist into childhood, or even adult life, as reported by David¹.

EMBRYOLOGICAL DEVELOPMENT

A brief review of the embryologic development of the rectum and anus is necessary to understand the presence of these anomalies. The complete descriptions by Ladd and Gross², together with standard texts on embryology, are used as a basis for this discussion.

In the embryo of three weeks, the urinary tract and the hind gut of the gastrointestinal tract unite in a common cavity, the cloaca. This cloaca is separated from the outer surface of the body by the cloacal membrane and is di-

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

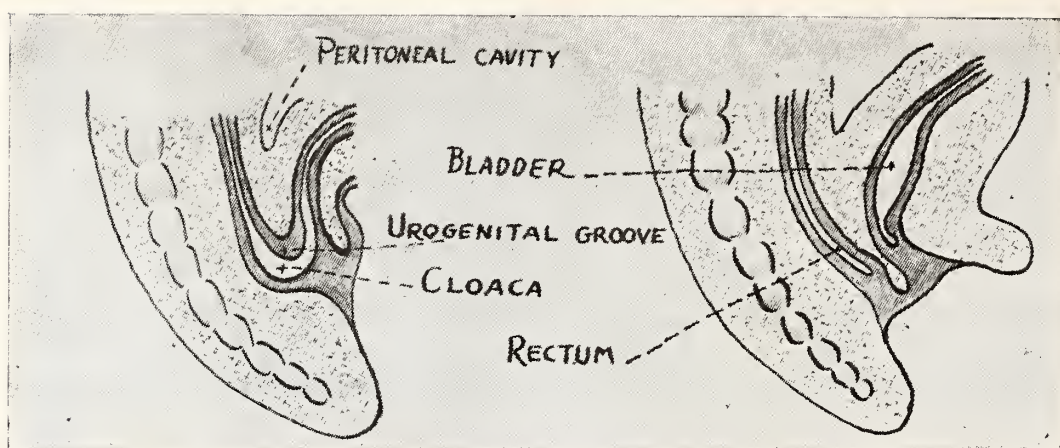


Fig. 1. Development of cloaca in embryo of three weeks.

vided into anterior and posterior portions by the urogenital septum, which by seven weeks grows downward to separate the urogenital tract from the intestinal tract. Any lack of complete separation at this stage may produce fistulae between the rectum and bladder, urethra or vagina.

The rectum is still separated from the body surface by the anal membrane or plate. There now appears a pit or inpocketing of this anal membrane, the proctodeum, which pushes upward to join the rectum. By the eighth or ninth week, the anus and rectum unite and the anal membrane disappears.

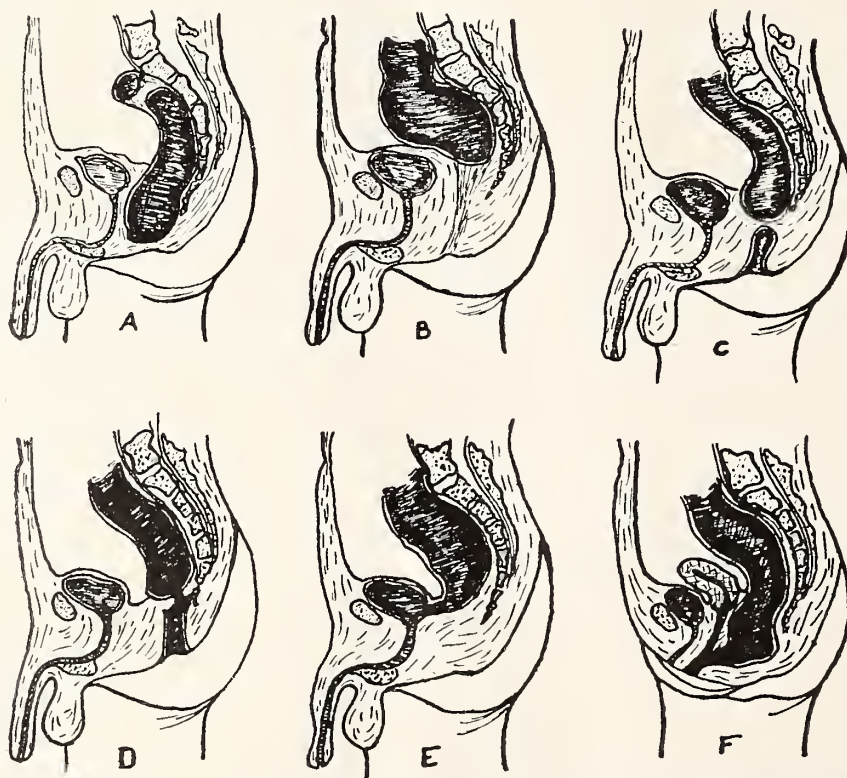


Fig. 2. Types of defects resulting from imperfect completion of embryologic development.

TYPES AND FREQUENCY OF DEFECTS

Figure 2, taken from Bolling³, shows the types of defects resulting from imperfect completion of these developmental processes. In A, imperforate anus is produced by a failure

of the anal membrane to invaginate or absorb. In B, there is complete absence of rectum and anus, difficult to correct. In C, the proctodeum has formed and advanced to meet the rectum but they are still separated by a persist-

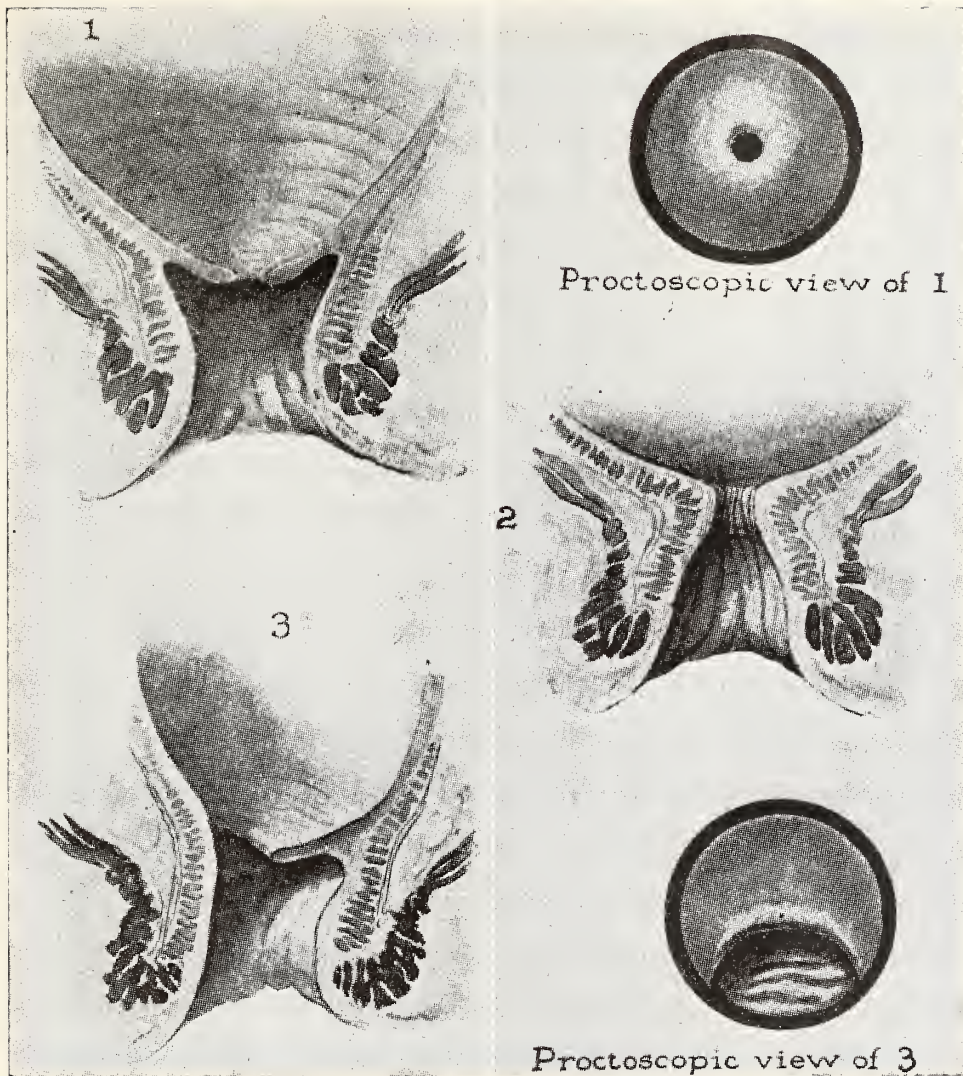


Fig. 3. Different types of congenital stricture of the rectum. 1. Iris type. 2. Tubular stricture. 3. Sickle-shaped diaphragm.

ent membrane. In E and F, types of fistulous connections with bladder and vagina are illustrated. In D, more germane to the present discussion, partial absorption of the membrane separating the proctodeum, or embryonic anal canal from the rectum, has left a stenosis or iris—diaphragm stricture of the passage. As shown in Figure 3, reproduced from David⁴ in Brennemann's *Pediatrics*, the diaphragm is usually thin, with circular or semilunar opening, but occasionally there is a tubular stricture (Fig. 3, 2). The constriction is usually found at one to two centimeters above the internal sphincter, but may occur, as in Case 4 of my series, at the anal outlet, in a position analogous to the membrane of imperforate anus.

The frequency of the severe defects, such as imperforate anus or absence of segments, is

given by various authors as one in 5,000 infants⁵, one in 7,581⁶, and one in 10,000⁷. The stenoses are probably much more frequent, considering the reports of Brennemann⁸, Kallet⁹ and others who have called attention to their frequency as a cause of constipation.

CLINICAL SYMPTOMS

The young infant with any appreciable degree of rectal stenosis will have some difficulty expelling the stool from the rectum. At time of defecation he strains, turns red and may cry. Distention and colicky pains are frequent. As the stools become firmer and therefore more difficult to pass, constipation increases. The very mild stenosis due to soft membranes may be automatically dilated by the passage of firm stools, but only after weeks of discomfort. When the occlusion is more marked, the stools

may be ribbon-like or pencil-like, as in Case 5 of my series. Irritation of the anal membrane from hard stools may lead to fissures, resulting in spastic sphincters and increased pain on passage of stool. Peri-anal or ischiorectal abscesses may follow infection of the intestinal wall (Case 6), while in some instances congenital fistulous tracts are associated with the other anomalies. Prolonged partial obstruction may result in chronic dilatation of the colon from retained feces and gas, at times simulating Hirschsprung's disease or congenital dilatation of the colon. As in this disease, fecal impaction may alternate with bouts of irritative diarrhea, and the child's general nutrition be seriously affected. Case 6 exhibited some of these difficulties and eventually may have presented the complete picture, had the obstructing membrane not been incised.

TREATMENT

As heretofore stated, simple dilatation with the examining finger relieves most of these infants. The little finger, well lubricated, should be used and force avoided. As the finger is inserted into the anus, the baby will bear down and exert sufficient force to dilate the ring in most instances. Dilatation may be repeated at intervals of one day to one week and should be carried to the point where the index finger may be inserted freely. The stools should be kept soft with mineral oil and agar. Fissure may be treated with silver nitrate and hot sitz baths. Fistulae must be removed by surgical means, dissecting out the tracts carefully. If the stenosis is not relieved by digital dilatation, stellate incision of the obstructing membrane is indicated. The rare instance of tubular stenosis, in accordance with the recommendation of David¹, may be treated by a longitudinal incision, sutured transversely, thereby increasing the diameter. In all cases attention to the infant's nutrition is essential.

CASE REPORTS

STENOSIS FROM IRIS MEMBRANE

Case 1. E. K. Jr., a white male infant, had a spontaneous delivery at full term, weighing seven pounds, ten ounces. Both of the parents were healthy and no history of congenital defects was secured. The baby was breast fed with complementary feedings of an evaporated milk formula,

and progressive weight gain had ensued. When seen January 24, 1934, at six weeks of age, there was a history of excessive gas and distention and of marked straining when stools were passed, despite the fact that the stools were loose.

Examination showed normal development and nutrition with no evidence of congenital defects. Rectal examination with the little finger showed a membrane just within the internal sphincter, with opening which barely admitted the finger tip, probably 8 mm. in diameter. It dilated fairly easily to admit the tip of finger. Dilatation was repeated on alternate days for a total of five times, at which time the index finger could be passed. The straining was diminished after the second dilatation.

Case 2. J. M. L., a white female infant of healthy parents, was delivered at full term in June, 1936. Birth weight was seven pounds, two ounces, and the baby, fed at breast, gained steadily. She was referred at six weeks by Dr. M. T. Green, because of fever and loose stools over a week's time, with one convulsive seizure. There was additional history of straining at stool with streaks of blood present.

Examination showed presence of acute pharyngitis, to which the febrile attack was attributed, also atresia of the right tear duct, resulting in constant lachrimation. Rectal examination with the little finger disclosed presence of a thin iris membrane about 1 cm. from the sphincter, the opening barely admitting the finger tip. With slight pressure, complete dilatation to full finger size was secured and no recurrence of symptoms was reported after this single dilatation.

Case 3. S. G., was a white female infant referred at three and a half months of age by Dr. Wilkins McDade of Minden. She was delivered spontaneously at full term, weighing eight and a half pounds. Her neonatal period was uneventful and she had gained satisfactorily on breast feedings. At four weeks of age, she awoke screaming, then had an attack of cyanosis followed by pallor and limpness. A similar attack occurred on the day of my first examination. For two weeks prior to examination, the previously existing constipation had been exaggerated, requiring suppositories for relief. Straining at stool was marked.

Physical examination revealed a well developed baby, weighing twelve and a half pounds. No abnormalities were discovered until the rectal examination, when an hypertrophied membrane was found just above the inner sphincter, with an opening about 8 to 10 mm. in diameter. This membrane was dilated rather easily. On examination two weeks later, the finger was passed freely through the opening and the mother reported that two to three stools were passed daily without straining.

STENOSIS FOLLOWING OPERATION FOR IMPERFORATE ANUS

Case 4. P. C., a full term white male infant, was referred to the Highland Sanitarium December 17, 1936, by Dr. J. L. Page of Vivian. The baby had taken feedings well for the two days since his birth, but only a very small amount of meconium passed. The abdomen increased in size and it was noted on inspection that almost complete atresia of the anus existed.

Examination showed the abdomen markedly distended, doughy in consistency, dull on percussion over the flanks. On inspecting the perineum, no anus was found, but there was a small duct extending along the raphe, with pin-point opening in its posterior end, through which meconium oozed. The perineum bulged downward. The infant seemed to be in good condition otherwise.

Operation: After hypodermoclysis of 200 c.c. of saline solution, Dr. J. A. Hendrick resected the fistula and incised the persistent anal plate, creating an artificial anus. The rectal mucosa was brought down and sutured to the skin. The baby progressed satisfactorily and went home on the following day. On March 9, 1937, three months after the operation, the baby was returned to the office because of intense straining at stool and passage of small stools. Examination showed good general condition, the baby weighing 11 pounds, 12 ounces. There was considerable scar tissue around the artificial anus, with contraction closing the passage to the point that the finger tip could not be inserted (probably 5 mm.). The opening was dilated gently with a small speculum, and this was repeated daily for six days, by which time the little finger was admitted. Since then, dilatations have been continued at intervals gradually increasing to one week. At the present time, the index finger can be passed with gentle pressure and symptoms are relieved.

STENOSIS FROM CONGENITAL ATRESIA; SECONDARY FISSURE

Case 5. E. M. W., a white female infant of five months, was referred December 21, 1935, by Dr. M. S. LeDoux, because of difficulty and pain on passage of stool. The baby was delivered at full term, of healthy parents, weighing eight pounds, ten ounces. Breast feedings were adequate for two months, since then complemented with condensed milk and later cow's milk formulae, with addition of cereals and vegetable soup at four months. The mother stated that the baby always had discomfort on passing stools, regardless of their consistency, and the stools have had a ribbon-like formation. Prune juice was started at one month, and suppositories or enemas were used daily from one to three months of age. For two weeks prior to the first visit, loose stools had been

present, the peri-anal skin excoriated and the baby extremely uncomfortable at time of stool.

Physical examination showed good general nutrition, with excellent muscle tone. Slight distention of the abdomen was noted. Nothing otherwise of significance was discovered until the anal region was examined. The skin for several inches around the anus was moderately excoriated and inflamed. The sphincter was clamped tightly and on spreading the skin margins, a fissure about one-eighth inch long was seen in the midline anterior to the anus. Careful examination disclosed a firm band-like constriction just at the internal sphincter with opening only about 5 mm. in diameter, not admitting the tip of the little finger.

The fissure was treated with silver nitrate applications and hot sitz baths for several days, then digital dilatations started. The stools were kept soft with mineral oil and agar-agar. By December 26 the finger tip could be passed and the interval between treatments was increased to four days. By January 3, 1936, two weeks after treatment was instituted, the fissure was practically healed, although occasionally slight bleeding occurred on dilatation. After February, dilatations at intervals of one to two weeks sufficed and the baby was much more comfortable. Less distention was present. By May, the index finger could be passed with ease and the family left town for a vacation. Occasional treatments were given during that time, and when seen again in December, one year after treatments were instituted, the baby was in excellent condition, with no rectal symptoms, so long as she took mineral oil. Digital examination showed no fissures, with the opening expanded to index finger size. Some thickening of the wall at the internal sphincter was still manifested.

STENOSIS FROM IRIS MEMBRANE; PERI-ANAL ABSCESS; DILATATION OF THE COLON

Case 6. B. B., a white female infant, is included in this series by courtesy of Drs. R. T. Lucas and Barron Johns. I had the privilege of seeing the baby on several occasions with Dr. Lucas. Apparently normal at birth on November 17, 1930, the baby was breast fed, having only moderate difficulty due to distention. At six weeks of age, an indurated swelling appeared on the inner portion of the left buttock, with a history of pus and blood in the stool. A definite abscess developed and was incised by Dr. Johns, draining pus freely. The incision healed but occasionally reopened and discharged a drop or two of pus. During the next few months the baby had some difficulty due to pyelitis, followed by anorexia and secondary anemia. At six months of age, distention increased and the baby would take milk only when asleep. A history of straining at stool since four months of age was secured.

Examination showed slight undernutrition and pallor, the baby weighing 15 pounds, one ounce. While asleep, with the abdomen relaxed, a hard mass was found starting in the pelvis and extending upward above the rim of the pelvis, movable, nodular, giving the impression of a fecal mass. Slight induration persisted at the site of the perianal abscess. The little finger could not be passed beyond the internal sphincter, meeting a firm ring, beyond which were impacted feces.

The patient was seen by Dr. Johns, who confirmed the diagnosis of fecal impaction. After the use of oil enemas, part of the mass was removed and fluoroscopic examination after barium enema showed a movable mass in the rectum, with dilatation of the upper rectum and sigmoid colon. The constricting membrane was then dilated with a small speculum and the impaction partially broken up, then by use of enemas, completely removed.

Digital dilatations were used at varying intervals and mineral oil with agar given regularly. At 16 months, however, obstructive symptoms increased and despite daily dilatations, no improvement was noted. The baby was again referred to Dr. Johns and under light anesthesia, the obstructing membrane was cut with a crucial incision and well dilated. Subsequent examinations with the index finger showed a free passage through the site of the former membrane and the child was symptomatically relieved. Abdominal distention was markedly diminished.

RECTAL EXAMINATION OF NEWBORN INFANTS

In an attempt to secure some idea of the frequency of persistent membranes or other congenital rectal defects, examination was made of a constructive series of 150 infants delivered in the Shreveport Charity Hospital. Results from rectal examination of a consecutive series of newborn infants at Shreveport Charity Hospital:

Of the total number, 102 were negro, 48 white infants, with a slight preponderance of male infants. Digital examinations were made

with the little finger, which measures 1.6 c.m. or $\frac{5}{8}$ inches in diameter at the terminal joint. In those instances where persistent bands or constricting rings were not found, this finger could be passed with ease, even in the case of premature infants weighing four pounds. In 19 instances, or 12.6 per cent, there was resistance to passage of the finger, in most cases apparently due to a slight ring-like constriction just above the internal sphincter. Three infants had definite membranes situated 1 to 2 centimeters above the internal sphincter, with openings 1.2 to 1.5 centimeters in diameter. They dilated readily. A fourth infant had a crescent or semi-circular membrane similar to No. 2, Fig. 3., very thin and easy to stretch.

As noted in Table I, the defects were more numerous among the female infants, although Ladd² finds about equal frequency if the more marked defects in the two sexes. The frequency in white and colored infants seemed to be about the same. These findings would indicate that mild defects, due to incomplete absorption of the anal plate, are comparatively frequent. In most instances, as the baby grows larger, dilatation by firm stools probably corrects them automatically. That sufficient occlusion as to interfere with normal evacuations of stool is not infrequent, is indicated by the number of clinical cases reported. It is therefore a good practice to do a plain digital examination of the rectum when any infant or child has a history of persistent constipation and especially in those infants who strain at stool, pass ribbon-like stools or have marked distention. Similarly in cases of suspected Hirschsprung's disease, examination for presence of rectal obstruction is indicated.

SUMMARY

Congenital defects of the rectum and anus

TABLE I

	White Female	White Male	Colored Female	Colored Male	Total Female	Total Male	Total Series
Number of infants.....	22	26	44	58	66	84	150
Average weight in ounces.....	113	116	109	116	110	116	114
Anus smaller than 1.6 c.m.....	6	1	8	4	14	5	19
Percentage	27	4	18	7	21	6	12
Definite abnormality.....	2	1	1	0	3	1	4

may produce complete or partial obstruction to the passage of intestinal contents. Partial obstruction, due usually to constricting rings or iris-like membranes, may lead to persistent constipation, straining at stools, distention of the large intestine, fissures, fistulas and other related disturbances, as illustrated by six case reports. Examinations of a series of newborn infants indicates that these are automatically dilated by passage of firm stools as the baby grows older. The presence of any of the symptoms or conditions enumerated above warrants a rectal examination. These membrane defects are relieved in most instances by simple dilatation, but operative treatment may be necessary for the more persistent.

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DISCUSSION

Dr. James H. Wells (Ruston): I should like to ask Dr. Webb what he used in the form of dilators. Did you use some small rubber dilators? Please give us a little information on your technic of dilatation.

Dr. C. H. Hill (Monroe): I have had a few cases like that. Having had quite an experience in rectal diseases, mostly in grown people but some in children, there is one thing I want to stress to the general medical profession, especially those who do obstetrics. I have observed for almost twenty years that soon after birth, in those children who do not breathe easily and you want to stimulate respiration by dilating the sphincter muscle with your finger, that is sufficient. That is the best dilator. The mucous membrane is tender, and the average finger will suffice for that without using any instrument at all. Those children who are dilated at birth seldom have any rectal trouble afterward.

I have done quite a little obstetrics, and I make it a rule that as soon as the baby is born, even if it cries heartily, to introduce my finger in the

rectum. As long as I have observed those children, and some of them are now twenty years of age, they have not had any rectal trouble.

I think you will get ahead of a lot of rectal trouble, especially little fissures, and things like that, if you will do that as soon as you can. Dilate routinely by introducing the finger in the rectum. If there is a little constricting band, or something, you can take care of it and give him a better nerve and blood supply which will last him indefinitely.

Dr. J. E. Knighton, Jr. (Shreveport): I do not know whether Dr. Webb included in his paper one of my own youngsters, but he saw them, and I can testify for him that these conditions do make a difference. We took care of it very nicely, and the boy is doing fine since then.

Dr. C. H. Webb (In conclusion): In answer to Dr. Wells, I agree with Dr. Hill that the finger is the best dilator to use if at all possible. In most instances we find that with gentle force the little finger can be passed. In those too small for the tip of the finger to be introduced, a rubber dilator may be used or an instrument available to nearly every one, a small nasal speculum. Care must be used with any instrument, however, because the mucous membrane is easily torn. Occasionally, even with digital dilatation, you will get a small amount of blood but if care is taken this will not do any particular damage.

SEPTICEMIA IN CHILDREN*

REPORT OF FIVE CASES WITH A REVIEW OF THE LITERATURE ON THERAPY

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In this paper I am reporting two cases of pneumococcal septicemia, one case of staphylococcal septicemia, and two cases of streptococcal septicemia.

Due to time allotment on each paper, it will be impossible to give complete details in each case reported. I shall give only the points of interest.

CASE REPORTS

Case 1. is that of a pneumococcal septicemia in a child six years of age who had lobar pneumonia previous to admission in an adjoining town. On admission, the child's temperature was 106° rectally; pulse 150, thready; respiration around 50; leukocyte count 14,000, 71 per cent polys. The child was apparently critically ill. The history was that of seven-day lobar pneumonia, bilateral purulent otitis media. He had had his crisis and

*Read before the Louisiana State Medical Society, Monroe, April 27, 1937.

had seemed well until two days after the crisis, when fever returned. On admission, roentgen rays were made of chest, mastoids, and sinuses; all negative except chest. There the presence of fluid over the entire right side of chest was found. Aspiration revealed pus thick and yellowish-green in character. A portion of the ninth rib was resected in the right posterior axillary region. (A culture of pus was made). The child's temperature did not decrease as expected after evacuation of pus. As temperature continued, the chest was again roentgen rayed and a pocket of pus was evident posteriorly, apparently in the pleural sac in region of right apex and middle lobes. No new incision was made in the hope that the pus pocket might dissect its way into the original drainage area. After a few days, it was necessary to drain the pocket of pus by breaking up adhesions with the finger through the original opening. After this the child seemed improved. On the tenth day of hospitalization, the temperature rose and the child complained of itching over different areas of body, and chilly or cold sensations. At this time blood culture was taken and 18 hours later the report was positive for pneumococci type I. Fulton's type I anti-pneumococcal serum was given intravenously as soon as obtained, 20,000 units given on twelfth day of hospitalization, no marked results noted, no reaction. Eight hours later 20,000 units intravenously repeated; blood culture following day still positive, so 20,000 units given intravenously again. At this time, 13 days after admission, an abscess was evident in lumbar region near lower pole of right kidney. This was drained and pneumococci found present in pus evacuated. Twenty thousand units of antitoxin was given intravenously following evacuation of abscess. Blood culture at this time was negative. Convalescence was long but he continued to improve. The patient was in the hospital 25 days. He remained in bed at home for six weeks and completely recovered. If you will notice this child recovered on drainage of foci of infection and pneumococcal antitoxin. He did not receive any dye or antiseptic or blood transfusion.

Case 2. This is white male, aged 4, who had pneumococcal septicemia and the usual history of lobar pneumonia. On admission to the hospital he was in a state of severe cyanosis and heart failure; the oxygen tent was used, heart stimulants administered and he recovered apparently for a few days, then empyema developed. In draining this patient usual rib resection or rubber tube punch was not used. I had recently listened to a lecture on drainage of empyema in childhood using a cut-off silver tracheotomy tube No. 2, which was slipped between the ribs into a stab wound. The cavity drained well using this method, the temperature gradually returned to normal and

the child was discharged after removing silver tube and replacing it with a rubber tube as cavity was still draining slightly. After discharge, the temperature remained around 99° and 100° for over a week; then temperature of septic type developed. He remained at home 27 days before returning to hospital. His temperature was of low grade. On admission, a blood culture was made and positive pneumococci found. As the child was in a very grave condition the pneumococcus as not typed. Antipneumococci serum (a combined serum), put out by Lilly, to cover all types of pneumococci, was given in adult dosage intravenously. Six hours later the serum was used as before, intravenously. The results were gratifying, we thought at that time, as his temperature failed to rise in afternoon to 105° as it had in the past few days. The temperature was three degrees lower than it was the previous day. The day following serum, the temperature did not rise above 99° all day long, pulse dropped from 130 to 90 and respiration from 40 to 22 per minute. Here a fatal mistake was made. The patient was discharged through a misunderstanding of orders and no further serum was given. The child did well, I am told, at home for about four or five days, and was not returned to the hospital until a week had passed since the previous serum therapy. At this time a septic temperature was in full swing; urticaria and serum sickness. The patient was by this time very sensitive to skin test with serum and no further serum could be given. The child received several whole blood transfusions but finally expired. No other focus of infection developed, except in the kidneys. The urine showed numerous pus cells in all examinations.

This case, I think, is an example of the wrong way to handle a patient of this type. First, the drainage was done with a silver tracheotomy tube, which I think irritated or punched the lung, causing or helping to cause the blood stream infection. I am not criticising the method, as this was my first case and I might not have cut the tube off short enough. Second, a very bad mistake was made in failing to continue serum while the child was not sensitive to serum. Third, a blood culture should have been made as soon as empyema was diagnosed because over 6 per cent of these patients develop septicemia. I think all patients with empyema should be transfused before surgery is resorted to in order to prevent a septicemia.

Case 3 is that of staphylococcic septicemia in a white female, aged 19 months. She came in with bilateral otitis media, tonsillitis and broncho-

pneumonia, a white count of 17,000 and 81 per cent polys. Due to extreme cyanosis and to the fact that chest was not wet in character, she was placed under an oxygen tent. It was necessary to do a bilateral myringotomy as soon as the child could stand it. The following day a severe gastroenteritis was evident, pus, mucus and blood present, frequent stools. At this time the first indication of a possible blood stream infection was evidenced by temperature rising to 106° and dropping to 97° twice in one day, sweating, thready pulse and mild convulsions, extreme prostration. Blood culture taken at this time was positive for gram-positive cocci. Stool culture, urine culture and culture of pus from ears all showed the same organism present as found in blood. Blood count at this time was 15,000 total white, 90 per cent polys, 2,000,000 red blood cells, 42 per cent hemoglobin. Due to low red count and septicemia, 150 c.c. whole blood given as transfusion. Fluids by vein given daily. Six days later the child developed a marked edema due to protein and blood loss or destruction and loss of fluids; transfusion was repeated. The pneumonia at this stage of the disease was not very evident as chest seemed clear on examination; however, due to sudden increased respiration a roentgen ray of chest was made, atelectasis of the base of the left lung was found and pneumonic process was apparently gone. The patient developed convulsions and spinal puncture was done mainly to determine by the Queckenstedt test the presence or absence of a thrombosed lateral sinus. Spinal fluid was under pressure but thrombosis was negative. Blood transfusion was repeated and the child from this time on convalesced. After 40 days of this critical illness, temperature became normal and after negative roentgen rays of mastoids, patient was discharged well apparently except for draining ears. Two weeks later returned with a definite mastoiditis. After operation the child recovered and is well and healthy today, four years later. In this case the only therapy was repeated whole blood transfusions and symptomatic care; no dyes, neosalvarsan, no vaccines, no chemicals were used and the patient recovered, proving the value of blood in such cases.

Case 4 is that of a streptococcic septicemia and meningitis as a complication of scarlet fever. The infant was a white female six months old, in perfect health until March 11, 1937, when she developed a high temperature and rolling of the head. The parents consulted an ear, nose and throat specialist and both ears were opened; twelve hours later a scarlet fever rash appeared and temperature remained elevated. Scarlet fever antitoxin was given subcutaneously and the infant returned to its home in the country as parent would not hospitalize the case. I did not see the

child the next day but its father reported rash about gone and temperature practically absent. The following day she was brought in in convulsions, more or less continuous. She was hospitalized; leukocytes, 19,300; 86 per cent polys; malaria negative; urine negative; roentgen ray of chest negative. Ear, nose and throat consultant reopened both ears. Later in the afternoon convulsions became more frequent and rigidity of neck was noticed. Spinal puncture revealed streptococci present, also blood culture taken at this time. As prontosil was being highly recommended for streptococci of hemolytic type, 5 c.c. of the drug was given intramuscularly every six hours. Prontylin could not be given orally due to set jaws and convulsions and inability to swallow. Spinal punctures were repeated as often as necessary to reduce pressure. The dye was readily absorbed and after the first injection even the spinal fluid was pink in color. The temperature dropped from 106° rectally to 102° rectally in 48 hours and convulsions were somewhat decreased but after three days the child expired. There was no suppression of urine from large repeated doses of prontosil. This case is reported due to the fact that prontosil is being used extensively for treatment of scarlet fever and streptococci infection.

Case 5. Drs. McHenry and Simonton graciously have allowed me to report a case of streptococcic septicemia in a 16 year old white male treated with prontosil. The history was that of a typical pneumonia shown by roentgen ray to be a central type involving lower left lobe. Treated as such from January 22, to January 26, 1937. At that time blood culture was reported positive cocci (streptococcus). Temperature was ranging from 106° to 97° daily; prontosil was started 10 c.c. intramuscularly every four hours, two prontylin tablets every four hours. Twenty-four hours later, prontosil cut to 5 c.c. every six hours and one tablet of prontylin every six hours, continued this treatment on 27, 28, 29 and 30. Discontinued prontosil and kept up tablets orally until discharged. On this treatment, temperature became normal in two days and the patient eventually recovered completely.

TREATMENT AND PROPHYLAXIS

Septic infections of the new born may be prevented by strict aseptic technic; also by surgical intervention in case of local infections before sepsis has occurred, and blood transfusions in such cases as require shocking or mutilating operations. In other words, remove the infection sufficiently early and stop the flow of bacteria into the blood stream before the organs all over the body are involved.

If prophylaxis fails and sepsis is known to

be present, then the picture is not hopeless in all cases. It depends upon the etiologic agent and resistance of the patient.

As the streptococcus is the most frequent cause of sepsis, I shall discuss treatment of streptococcic septicemia first. Streptococci are classified as hemolytic and non-hemolytic. The hemolytic are the usual streptococci found in blood stream infections, as *Streptococcus erysipelas*, *Streptococcus scarlatinae*, *Streptococcus pyogenes*. The mortality rate in streptococcic septicemia has, in the past, ranged around 60 per cent to 90 per cent. The use of anti-streptococcic serum for erysipelas, and scarlet fever; polyvalent serum for other types has long been in use. Due to some streptococci producing exotoxins and some endotoxins, a satisfactory polyvalent serum has not been produced. However, in scarlet fever and erysipelas it usually produces good results. Nothing as yet has been effective when the streptococci are the causes of a definite septicemia.

Early in 1935, a startling chemo-therapeutic success was announced by Damagk in Germany. It was claimed to be specific in treatment of hemolytic streptococci infections. Since then, it has been used in every infection caused by the streptococcus, as erysipelas, angina, streptococcic pneumonia, acute and chronic polyarthritis, septic endocarditis, scarlet fever, puerperal fever, puerperal sepsis, septic abortions, lymphangitis and acute tonsillitis. The Winthrop Chemical Company in the United States has put this chemo-therapeutic dye on the market under the trade name of prontosil and a tablet form under the name of prontylin. It is now being used extensively by most every physician in the country.

Otto Scheurer reports excellent results in erysipelas, suppurative anginas, streptococcic arthritis cases, but poor results in chronic polyarthritis and septic endocarditis lenta. Lathor reports excellent results in puerperal fever; four failures in 79 cases. Schranz reports 60 cases of sepsis treated with prontosil with only three deaths. He used large doses up to 40 c.c. and never below 20 c.c. A dose of this size can be used five to six days without giving rise to any disturbance. Schranz also obtained good results in staphylococcus infections as in osteomyelitis, furuncles and skull injuries.

He also used it prophylactically following labor, cesarean section, and curettage; also as a gargle. It is now being used subcutaneously more than by vein as it is quickly absorbed and no abscesses are formed, in doses from 10 to 20 c.c. every six hours the first day, in conjunction with one or two tablets every four hours, reducing the dosage as the patient improves.

I have used it only in two cases and observed its use in two others. I used it prophylactically in a patient with empyema who showed streptococci in numbers in the pus and was running a septic type of temperature and had had one or two chills. This patient recovered, but the blood culture never was positive. The second patient I reported previously in this paper died, but it was hardly a fair trial, as the child had streptococcic meningitis when prontosil was started. This third patient I observed recovered and blood culture was positive; this case was diagnosed early.

I do not want to infer that prontosil is a cure all, neither do I believe it cures all hemolytic streptococcic infections, for which it is said to be specific, but I do believe and have seen enough results from it to use it in any severe staphylococcic or streptococcic infection. Do not use magnesium sulphate while using prontosil as sulphhemoglobinemia might develop.

The staphylococcus is next in frequency in causing sepsis. Vaccines, gentian violet, neoarsphenamine and prontosil are advised by most physicians to be used in this infection, but these cases can be handled very satisfactorily with repeated blood transfusions, symptomatic treatment and evacuation of abscesses when formed. Neosalvarsan possibly is the only other therapy worth while in these cases. Lederle Laboratories has produced a very effective staphylococcic antitoxin and it is of great help in sepsis when due to staphylococcus.

Cecil reports that in types I, II, V, VII and XIV pneumococci anti-serum is effective. In type I, Felton is most effective. This, of course, can be used to prevent the complications of sepsis, and in treating these types in sepsis. Also, Lilly's combined serum for all types of pneumonia could be used in prophylaxis in non-typed cases and cases without specific anti-serum. Besides specific anti-sera chemotherapy and blood transfusion, the last,

but not least weapon in septicemia, is immuno-transfusions. Scott and Cadham have received marked results in its use. This principle, as described by Scott, is simply making a vaccine from the organism found on blood culture and injecting a matched donor daily with increasing dosage. After eight or more days, the patient is transfused, vaccine continued on donor and transfusion repeated as desired. Cadham combines the giving of specific immune bodies with non-specific agents, such as the complement found in normal serum. Cadham has available a colony of rabbits immunized against about 50 strains of streptococcus and staphylococcus, isolated from the blood of patients with septicemia. As quickly as the organism can be isolated from the patient's blood in a new case of septicemia, a vaccine is made from it, which is injected by vein into the rabbit. This is presumed to cause an outpouring into the blood stream of immune bodies, previously attached to the cells in the fixed tissue and consequently to give a very high titer in the serum for the specific organism used. The rabbit serum is given intramuscularly to the patient. To make these immune bodies effective, complement is given the patient in the form of normal human serum. He matches a donor, shakes the cells down and gives only the matched serum in 100 or more c.c. as a transfusion, thus furnishing the complement needed. This method, according to Cadham, cuts mortality to 15 per cent.

If you do not have facilities to use vaccine and immuno-serum, use a person who has once had the disease if he can be found, or any person whose blood matches and is suitable. If the first transfusion from donor does not improve the patient, get a new one before repeating the transfusion.

CONCLUSION

The treatment of septicemia is still a major problem in medicine today, in spite of serums, vaccines and chemicals.

(1). If you have an antitoxin for the septic infection, use it and plenty of it, before the patient becomes sensitive and it cannot be repeated.

(2). If infection is of a hemolytic streptococcic variety, try prontosil; it will not harm the patient and good results are sometimes had.

(3). If you do not have facilities for vaccine and immuno-serums, use repeated whole blood transfusions and, above all, find the focus of infection and eradicate it.

DISCUSSION

Dr. C. M. Jarrell (Alexandria): I think Dr. Talbot's contribution is timely, and I hope we can add something to the meager knowledge we have for dealing with this important subject, a subject possibly more important than any other in the practice of medicine, whatever the branch is.

He has discussed several different types of septicemia, staphylococcus, streptococcus and pneumococcus. The essential thing that seems to disturb us most is the streptococcus.

Spinal punctures are done for diagnostic purposes. According to some authorities, there is danger in doing spinal punctures in any septicemia because you may damage one of the tiny veins of the cord and turn the organism loose into the meninges. That is one point.

We feel we have possibly gone a step further with pneumococcus than we have with the streptococcus. For instance, we say of streptococcus that about all we know is that it is the most virulent bug we have to contend with. Example, here are a lot of ants. We know exactly what we are talking about, that they are ants. We know that, whether it is a little, tiny ant, one of the big black ones, or one of those that bite you with pincers. If we knew what streptococcus we were dealing with we would possibly get somewhere. For instance, where you have a burned surface or a skin lesion, there may develop a deep streptococcic infection or scarlet fever. You may get it through your blood stream, you may get it in your throat, and you may get it in your blood through surgery, or otherwise. Then we appeal for something to aid us in therapy.

There is a new preparation out under the trade name of prontosil, which is given by vein or muscle hypodermically, or the other that is given internally which might be an ideal remedy if we knew the strain. The laboratory shows a streptococcus, but it does not tell what type.

Relative to the staphylococcus, there are plans and technic for dealing with the staphylococcus, which are much more encouraging than with the streptococcus. We can get meningitis from streptococcus, or any of those that are absorbed into the blood. That is where our trouble starts.

One phase of the paper which I think is very commendable and laudable is his blood transfusions in any of the septicemia group. Under our general plan, adequate nutrition in proper form, fluids in proportion to the requirements, and then transfusions to add a new group of soldiers to fight the invading host, seem to be best.

Dr. E. L. Miller (Jena): Dr. Talbot touched on that which he says is a most important thing. I would like to hear it more fully discussed. He referred to prophylaxis. We understand, of course, that in the management of pneumonias keeping them under treatment a sufficient length of time is the prime thing in prophylaxis.

I am not in the practice of medicine now. I work in public health, but I am concerned with prophylaxis. It took a quarter of a century to teach the laity iodine, and a quarter of a century to teach them when not to use iodine. Thus incorrect use of iodine produces conditions that make prophylaxis a difficult matter when the patient reaches the physician. Neglect of wounds also produces this condition.

Dr. E. A. Socola (New Orleans): Dr. Talbot has asked me to say a few words about staphylococcus septicemia. Up to a short time ago, it was the most hopeless proposition. At the end of 1936, the Lederle Laboratories put on the market the so-called staphylococcus antitoxin.

In the first month of 1937 I was confronted with a fulminating type of staphylococcus septicemia which was evident in the form of bronchopneumonia, later emphysema, cellulitis of the upper third of the arm and shoulder and part of the neck, osteomyelitis of the humerus, and endocarditis. After repeated transfusions, I decided to use the staphylococcus antitoxin. The cultures came back repeatedly positive for *Staphylococcus aureus*. However, we persisted, as we knew it was practically hopeless without further treatment.

At the present time, although the child is clinically still very ill, he has improved considerably and his blood cultures have been negative for the past three weeks. I think in a case of staphylococcus septicemia it is worthy of trial. The work of Joyner and others, previous to this preparation being put on the market, has been somewhat encouraging. I think it is worthy of trial in such types of septicemia. It has not as yet been standardized fully, but we hope in the near future to be able to get standardized staphylococcus antitoxin. In one particular case we had to desensitize the child, because he was very sensitive to horse serum through previous administrations of other forms of horse serum.

Dr. L. W. Gorton (Shreveport): I think that the virulence of the pneumococcus should be taken into consideration, that is, you can carry the pneumococcus over several generations on artificial media and it will lose a great deal of its virulence, but if the same organism is then carried through several generations on blood media, the virulence will then again increase. In other words, if there could be some way of estimating the virulence of the organism this could give a better idea as to the prognosis and treatment.

Another factor that could be taken into con-

sideration is the allergic reaction to any particular bacteria.

Dr. Cecil O. Lorio (Baton Rouge): With regard to prontosil, I should like to say I have used it in only six cases since it came on the market. It was just reported in Baltimore last November. When I came back from the Baltimore convention, it happened I had a child who had a beta hemolytic streptococcal septicemia. The culture did not prove positive. That is, the two we took were negative, but the throat culture was positive in each of the cultures taken. Everything was symptomatic of a septicemia in that child. It had a double picket-fence temperature every day, going down to 98°, and then back up to 106°. That went on for about nine days.

When I was in Baltimore I asked to have some of this material sent to me, and when it came I began the use of it on this particular child. After the first remission, the temperature failed to rise again. Whether the prontosil cured that child, I do not know, but whatever it was, it was spectacular.

In patients with otitis media, who run a temperature for three and four weeks, we usually have to attribute that to a *Streptococcus hemolyticus*. When you have a culture of the ear itself, you think there must be a septicemia in that there is thrombosis of the veins around the ear and the surrounding tissues. In such children where I have gotten the cultures and found the beta hemolytic streptococcus, I have used the prontosil. In those cases where I have used it, within three days' time the temperatures have come back to normal and five out of six ears stopped discharging within three to four days. This may just happen to be the case where I have given the material, and I do not want to make any particular boasts about prontosil until we know more about it.

FACTORS DELAYING THE DIAGNOSIS OF PULMONARY TUBERCULOSIS*

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and

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NEW ORLEANS

Medical literature has been replete with studies on the epidemiology and pathogenesis of tuberculosis since, and even prior to, Koch's discovery of the bacillus in the last century. These analyses have proved of unlimited value,

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but due consideration has never been given the clinical factors which cause delay in the diagnosis of pulmonary tuberculosis as encountered in Louisiana.

Keeping abreast of modern methods of diagnosis and treatment, a series of cases is here analyzed in an effort to promote earlier diagnoses. Best results in therapy are usually obtained where there is less pathology. An attempt is therefore made to discover whether the patient, the physician, or the disease itself causes delay in diagnosis.

We present a statistical review of 300 white patients now under treatment in the Dibert Memorial of Charity Hospital of Louisiana at New Orleans. The analysis includes the most prominent factors relevant to classification on admission, age incidence, family and contact history, symptomatology, and a correlation of these various factors with the diagnosis of the disease. The data were secured from the patients themselves.

CLASSIFICATION ON ADMISSION

The classification recommended by the National Tuberculosis Association is used in this study. The 300 patients have been divided into three groups: five minimal, 135 moderately advanced, and 160 far advanced cases (Table I). Sex seems to have no significant relation

	Moderately Far						Total
	Minimal		Advanced		Advanced		
	Per		Per		Per		
	No.	cent	No.	cent	No.	cent	
Females	2	1.5	57	44.1	70	54.2	129
Males	3	1.7	78	45.6	90	52.6	171
Total	5	1.6	135	45.0	160	53.3	300
Out-Patient Department							
Females							25
Males							21
							46

Age in Years	15—24		25—34		35—44		45—54		55—64		65+	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Females	43	33.3	55	42.6	25	19.2	5	3.8	1	0.8	—	—
Males	21	12.3	66	38.6	27	15.8	41	23.9	10	5.8	6	3.5
Total	64	21.3	121	40.3	52	17.3	46	15.3	11	3.6	6	2.0

to the stage of the disease. Minimal tuberculosis is conspicuous by its infrequency, comprising less than 2 per cent of the total. Moderately advanced and far advanced patients number 45 per cent and 53.3 per cent, respectively. Because of the overwhelming majority of advanced cases there is obviously a prolonged interval between the onset of pulmonary pathology and its clinical recognition.

AGE INCIDENCE

Because of regulations regarding admission to the Dibert Memorial, no children are included in this series. Ages range from 16 to 78 years. Of the females (Table II), 76 per cent are below 35 years, as compared with 51 per cent of the males in the same age group. There is a gradual waning in incidence in females above 35 years, whereas approximately 25 per cent of the males fall into the group between the ages of 45 to 54.

FAMILY HISTORY

A positive history of tuberculosis in the immediate family was obtained in 28 per cent of the entire series. The most striking feature observed in this study (Table III) was the

	Positive		Negative		Total
	No.	Per cent	No.	Per cent	
Females	51	39.6	78	60.4	129
Males	34	19.9	137	80.1	171
Total	85	28.3	215	71.7	300

relative predominance of a positive history in the females as compared to the opposite sex; 39.6 per cent: 19.9 per cent. This difference was undoubtedly due to social and economic factors. Contact with the tuberculosis patient in the home is more pronounced in female members of the household to whom is allotted the responsibility for the care and nursing of the sick.

CONTACT HISTORY

There is only a slight difference comparing

the positive findings of contact history (Table IV) and family history, the percentage being 33.3 and 28.3, respectively. Forty-five of the 100 positive contacts were married at the time

TABLE IV.
CONTACT HISTORY

	Positive		Negative		
	No.	Per cent	No.	Per cent	Total
Females	59	45.7	70	54.3	129
Males	41	23.9	130	76.1	171
Total	100	33.3	200	66.6	300

of admission; of this group 5 or 11.1 per cent developed pulmonary tuberculosis after marriage, the diagnosis having been previously established in the mate. This figure seems to stress the importance of the role played by exogenous re-infection in the development of clinical pulmonary tuberculosis.

INCIDENCE OF DIAGNOSIS PRIOR TO ADMISSION

The data in the accompanying table (Table

TABLE V.
INCIDENCE OF DIAGNOSIS PRIOR TO ADMISSION TO THE HOSPITAL

Classification on Admission	Sex	Diagnosis not made		Diagnosis suspected		Diagnosis established		No. of patients
		No.	Per cent	No.	Per cent	No.	Per cent	
Minimal	Female	1	50.0	0	0	1	50.0	2
	Male	0	0	0	0	3	100.0	3
		1	20.0	0	0	4	80.0	5
Moderately Advanced	Female	9	15.8	9	15.8	39	68.4	57
	Male	15	19.2	8	10.3	55	70.5	78
		24	17.7	17	12.6	94	69.7	135
Far advanced	Female	16	22.9	19	27.1	35	50.0	70
	Male	15	16.7	23	25.5	52	57.8	90
		31	19.4	42	26.2	87	54.4	160
Total		56	18.6	59	19.6	185	61.6	300

V) show the number of diagnoses made before admission to the hospital. In the majority of cases, the patients were seen by more than one physician before the diagnosis was suspected or established.

These figures lead us to believe that the stage of the pathologic process in the lung bears no significant relation to the accuracy of diagnosis, the diagnosis having been missed almost as frequently in one group as in the other. The limited facilities of the average practitioner throughout the state easily account for the relatively high incident in the group where diagnosis was suspected (19.6 per cent). With wider use of the roentgen ray and laboratory aids, diagnosis would be established in a greater percentage of cases.

DURATION OF SYMPTOMS PRIOR TO DIAGNOSIS

The responsibility for delay in diagnosis when symptoms are present must be shared alike by the patient and attending physicians. Symptoms of a mild nature often seem negligible in the patient's estimation and thus he post-

pones medical consultation until more severe symptoms appear. The average duration of subjective symptoms prior to visiting a physician varied from two to ten months (Table

TABLE VI.
DURATION OF SYMPTOMS PRIOR TO DIAGNOSIS

Classification on admission to Hospital	Sex	Average duration of symptoms before visiting physician		Average duration of symptoms before diagnosis established	No. of patients
Minimal	Female	2.0 mo.	4.0 mo.		2
	Male	5.7 mo.	5.7 mo.		3
Moderately advanced	Female	4.9 mo.	9.2 mo.		57
	Male	4.4 mo.	22.5 mo.		78
Far advanced	Female	3.6 mo.	12.1 mo.		70
	Male	9.8 mo.	22.2 mo.		90

VI). The doctor should be held accountable for any added delay in establishing the diagno-

sis after the patient's first visit. An average interval of four to twenty-two months occurred from onset of symptoms until the diagnosis was established.

SYMPTOMATOLOGY AND DIAGNOSIS

In most instances, local symptoms, unless of

long duration or of a very serious nature, apparently are not sufficient to cause the individual to seek medical aid early. Therefore, a correlation was made of the initial symptoms with those which prompted the visit to the physician (Table VII).

TABLE VII.
SYMPTOMATOLOGY
Initial Symptom

	Cough and Expectoration		Loss of Weight and Fatigability		Hemoptysis		Pleurisy		Fever and Night Sweats		Grippal		Hoarseness		Gastro- intestinal		No Symptoms	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Females	54	41.9	26	20.2	8	6.2	17	13.2	3	2.3	14	10.9	2	1.5	3	2.3	2	1.5
Males	61	35.7	31	18.1	21	12.3	28	16.4	8	4.7	20	11.7	0	0	2	1.1	0	0
Totals	115	38.3	57	19.0	29	9.6	45	15.0	11	3.6	34	11.3	2	0.7	5	1.6	2	0.7
Symptom Prompting First Visit to Physician																		
Females	49	37.9	16	12.4	23	17.7	19	14.7	4	3.1	11	8.5	2	1.6	3	2.3	2	1.6
Males	44	25.7	20	11.7	45	26.3	25	14.6	11	6.4	20	11.7	1	0.6	2	1.1	3	1.5
Totals	93	31.0	36	12.0	68	22.7	44	14.7	15	5.0	31	10.3	3	1.0	5	1.7	5	1.7

Cough and expectoration were the most prominent initial symptoms and these also most frequently caused the patient to seek medical attention. In over 50 per cent of the cases, this symptom complex, although being the incentive for the visit, had been present for many months and undoubtedly was associated with constitutional symptoms of some degree. Yet these patients insisted that the accompanying symptoms were of little consequence and were not serious enough to interfere with their daily routine. True, pathology may be present in the lung parenchyma without any obvious symptoms as revealed in five cases reported wherein symptoms of subjective importance were absent, roentgenologic study revealed active pulmonary tuberculosis. Four of these cases were minimal, the fifth being moderately advanced. This does not necessarily imply that the number and duration of symptoms can be strictly correlated with the stage of the disease, for some of the patients volunteered the information that hemoptysis or pleurisy had been the initial symptom, and immediate skiagrams revealed either moderately or far advanced pulmonary tuberculosis.

Of all the symptoms listed, there is little variation between the initial and presenting symptoms, with the exception of hemoptysis. As an initial symptom it was present in 9.6 per cent of the cases, whereas 22.7 per cent sought medical aid because of blood spitting. This difference in percentage indicates that although these patients had had previous symptoms, a pulmonary hemorrhage was regarded with enough fear to prompt them to visit a physician.

Fever and night sweats, a combination of symptoms which in most textbooks is given a ranking position in the diagnosis of tuberculosis, were found with comparative infrequency in this series. As initial symptoms they were present in only 3.6 per cent, and as presenting symptoms, in 5 per cent of the cases.

Tuberculosis was suspected or the diagnosis established by the first attending physician in 62.3 per cent of the cases (Table VIII), as compared with 81.2 per cent as shown in Table V, wherein results are given for all physicians seeing patients before admission. Here the diagnosis was suspected in 19.6 per cent and established in 61.6 per cent. Thus, diagnostic

TABLE VIII.
RELATION OF SYMPTOMATOLOGY TO DIAGNOSIS BY FIRST PHYSICIAN: 300 CASES
Diagnosis Suspected or Established by First Physician

	Cough and Expectorations		Loss of Weight and Fatigability		Hemoptysis		Pleurisy		Fever and Night Sweats		Gripal		Hoarseness		Gastro-intestinal		No Symptoms		TOTAL	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Females	32	65.3	5	31.3	19	82.6	10	52.6	1	25.0	7	63.7	1	50.0	2	66.7	2	100.0	79	61.2
Males	26	57.8	13	65.0	34	75.6	16	64.0	3	27.2	11	57.9	1	100.0	1	50.0	3	100.0	108	63.2
Totals	58	61.7	18	50.0	53	77.9	26	59.1	4	26.7	18	60.0	2	66.7	3	60.0	5	100.0	187	62.3
Diagnosis Neither Suspected Nor Established by First Physician.																				
Females	17	34.7	11	68.7	4	17.4	9	47.4	3	75.0	4	36.3	1	50.0	1	33.3	0	0	50	38.8
Males	19	42.2	7	35.0	11	24.4	9	36.0	8	72.8	8	42.1	0	0	1	50.0	0	0	63	36.8
Totals	36	38.3	18	50.0	15	22.1	18	40.9	11	73.3	12	40.0	1	33.3	2	40.0	0	0	113	37.7

acumen was increased approximately 20 per cent by succeeding physicians.

COMMENT

In review, we shall attempt an explanation for the failure in diagnosis as regards the presenting symptomatology.

Cough and Expectorations: The diagnosis was not suspected in 38.3 per cent of this group. This was probably due to the tendency on the part of physicians to diagnose prolonged or recurrent coughs as chronic bronchitis or chronic sinusitis.

Loss of Weight and Fatigability: Tuberculosis was not suspected in 50 per cent of these cases. Such diagnoses as nervousness, nervous breakdown, overwork, overindulgence in alcoholics and tobacco, dissipation, and chronic debilitating diseases were offered by the attending physician.

Hemoptysis: "Blood spitting", which has been known throughout the centuries as one of the pathognomonic symptoms of phthisis, was a frequent source of error in diagnosis. Although the percentage of failure (22.1) was less than that in other groups of symptoms, it is still too high. The absence of positive physical findings on examination of the chest probably accounts for such diagnoses as ruptured blood vessel, irritation of throat, and bleeding from nasopharynx.

Pleurisy: When a patient is seen only once, it is difficult to make a diagnosis unless a suspicion of tuberculosis is ever present in the physician's mind and the patient is urged to return for further observation after the acute attack subsides. Idiopathic pleuritis, though it may be accepted by the majority of physicians, should never be used as such until a sufficient interval has elapsed and the lung has remained clinically and radiologically negative. Failure to recognize this has resulted in 40.9 per cent mistaken diagnoses.

Fever and Night Sweats: Climatic and endemic conditions undoubtedly are the source of confusion as regards this symptom complex. With the high incidence of malarial infection

The authors wish to express their appreciation to Dr. George S. Bel, Director of the Charity Hospital of Louisiana at New Orleans, for permission to report these cases.

in Louisiana, it is little wonder that a number of patients were treated previously with quinine, plasmochin or atabrine. This group leads all others in percentage of error, 73.3 per cent being neither diagnosed nor suspected.

Grippal: The diagnosis was missed in 40 per cent of the group presenting symptoms ordinarily attributed to an acute respiratory infection with or without physical signs of a pneumonitis. The constant occurrence of "flu" epidemics and the failure to realize that bed rest over a short period may render a tuberculous patient asymptomatic are the natural sources of error. As in any of the aforementioned symptom complexes, suspicion of tuberculosis is of prime importance.

Hoarseness and Gastrointestinal Disturbances: No critical analysis is attempted because of the small number of cases.

SUMMARY

An analytical study of 300 patients under treatment for pulmonary tuberculosis in the Dibert Memorial of Charity Hospital of Louisiana at New Orleans is presented.

On admission, 98.3 per cent are classified as moderately and far advanced pulmonary tuberculosis.

A positive family and contact history is obtained twice as frequently in females as in males.

The diagnosis is suspected or established by the first physician consulted in 62.3 per cent, whereas in those patients seen by more than one doctor, the percentage of diagnosis is increased to 81.2 per cent.

The average duration from the onset of symptoms to the time the diagnosis is established ranges from four to twenty-two months, of which time subjective symptoms were present two to ten months before the first physician was consulted.

Relevant to symptomatology, there are three obvious periods which cause delay in diagnosis:

1. Asymptomatic period. This is demonstrated by those patients whose accidental roentgenologic study of the chest reveals the presence of parenchymatous pathology ranging from minimal to far advanced stages.

2. Untreated symptomatic period. In this period are found two distinct types of patients:

- (a) those having mild symptoms which are not considered sufficiently serious to warrant medical aid; and (b) those patients with definite local and constitutional symptoms who fail to consult a physician until incapacitation is inevitable, because of ignorance or economic status.

3. Undiagnosed symptomatic period. This is the interval wherein tuberculous patients are treated symptomatically without recognition or suspicion of the true nature of the illness on the part of the physician.

CONCLUSIONS

The most important facts which may delay diagnosis of pulmonary tuberculosis are:

I. Disease.

- (a). Asymptomatology.

II. Patient.

- (a). Ignorance.

- (b). Negligence.

- (c). Economic status.

III. Physician.

- (a). Failure to suspect the disease.

- (b). Failure to recognize the disease.

- (c). Failure to utilize roentgenologic and laboratory facilities.

- (d). Inadequate investigation of contacts.

DISCUSSION

Dr. Morell W. Miller (New Orleans): In the body of the paper there are several points which strike me as being likely subjects to discuss. First, the point Dr. Monte has brought up, of the incidence in females being twice that of males, is well taken.

Another statistical study which he did not choose to elaborate at any great length was the occurrence, particularly in elderly males, of pulmonary tuberculosis. I mention this point for the reason that quite recently I have had an elderly individual with fulminating acute pulmonary tuberculosis.

The laity believe that, by reason of their years, they are immune from this disease. Unfortunately, many of us as doctors share this belief. Tuberculosis does not in any fashion restrict or limit itself to a certain age group. In these past few years of economic stress, perhaps more than in other years of good economic status, elderly males who, for reasons of earning a livelihood, were forced to engage in occupations which were quite unfamiliar to them, particularly of a manual character, were very apt to drain upon their reserve factors and break down those factors which we say go to make up resistance. This tended to make them victims of pulmonary tuberculosis,

whether of the secondary exogenous or secondary endogenous type.

Again, I believe the authors have dealt with us, as clinicians, rather kindly. They attribute, and correctly so, of course, some of the factors in delayed diagnosis to ignorance on the part of the patient, and again to the economic factor. As physicians, we represent the barrier between health and disease, and it is our duty to acquaint the public, whether the public be the wage earning of the indigent element of the populace, with the possibilities of tuberculosis. I feel that we cannot pass this over too lightly. We are responsible for the ignorance of the patients. As doctors, it is our duty to promote, in conjunction with civic groups and concerns of that sort, educational means for the individual who is otherwise unable to know the seriousness of early symptoms.

Lastly, I believe probably the factors in delay of diagnosis are due to sheer neglect on our own part. Anyone who has had, not necessarily any great experience, but any experience at all with the disease tuberculosis cannot fail to realize that tuberculosis in a far advanced stage can exist, and does exist often, in the absence of physical findings, particularly physical findings and, as Dr. Monte pointed out, symptoms.

In this particular regard, I stress personally the use of roentgen rays. It is quite true that roentgen rays are not accessible to many of us, particularly the doctor who has a rural practice. However, with the portable health units, and things of that nature, I feel we probably are not using them to our best advantage, certainly not to the best advantage of our patients.

The occasional use of the fluoroscope, which is an inexpensive procedure, I recommend very strongly as one of the means at our command for the detection of tuberculosis at a stage when the likelihood of cure is much greater than at a later stage where the pathology of the case is hopeless. In its early stage, pulmonary tuberculosis, in so far as symptoms are concerned, is not unlike a focal infection elsewhere in the body. We have the malaise, easy fatigability, anorexia, perhaps a low grade fever in women and girls, amenorrhea, cough perhaps, and a small amount of hemoptysis. The symptoms correlate almost identically those of any focal infection elsewhere in the body.

If we, as clinicians, ever hope to diagnose tuberculosis at its minimal stage, it seems to me we have to go about making this diagnosis with malice aforethought, so to speak. We must be taught and primed to make the diagnosis of tuberculosis. In this regard, one could speak indefinitely. I feel that we should, as doctors, become tuberculosis conscious, and hold in the back of our minds in any of these rather vague, indefinite cases, the possibility of tuberculosis as a

diagnosis, and the fall in figures which Dr. Monte has just placed before you will promptly be, at least in a measure, corrected.

Dr. E. von Haam (New Orleans): I should like to ask Dr. Monte two questions: First, how many of his cases that had careful examination showed positive sputum alone before symptoms appeared, that he ascribed to bronchitis, where there was a large amount of tubercle bacilli without any physical symptoms? The second question is, which type of tuberculosis is likely to go over to exogenous infection or endogenous?

Dr. Clyde Brooks (New Orleans): I should like to ask Dr. Monte if he has studied sedimentation tests in the early cases of tuberculosis. I know that is being done, and is being relied upon very much in the diagnosis of activity in the early stage.

Dr. R. A. Brown (Montgomery, Alabama): There are two points I should like to make in discussing Dr. Monte's paper which help explain why his figures for tuberculosis classification look so bad. In the first place, patients admitted to sanatoria fall into the moderate to far advanced group which accounts for less than two per cent of the total number of the patients surveyed showing a minimal lesion. The minimal cases are being found in greater numbers but are being kept at home.

In the second place, the finding of early tuberculosis is largely dependent upon the physician's interest in the disease. In the states where case finding programs have been in progress over a number of years on a state wide basis, sufficient interest has been aroused to result in about thirty per cent of the positive clinic cases having a minimal classification. It is difficult on a statement from the patient to place the blame for late diagnosis on patient or physician.

I should like to ask if in the questionnaire you determined how many of the three hundred (300) patients were studied by roentgen ray prior to admission to the sanatorium.

Dr. J. B. Elliott (New Orleans): I practiced medicine before the roentgen ray was discovered. I was taught to depend entirely on the physical findings. I still believe that is the main thing. You have to have careful examinations. I still stick to the old things taught me by my father fifty years ago, such as taking the temperature every three hours and keeping a record of that for a period of three months; then exercise, taking the temperature before the patient starts a one-mile walk, after the walk, and again in half an hour. I still do that.

Of course, the roentgen ray has changed everything in this subject of tuberculosis. The things I see now I could not have dreamed of forty years ago. So diagnosis has been made much easier since the roentgen ray.

Keeping in your mind the possibility of tuberculosis is very often overlooked. If you are conscious of the danger of tuberculosis, look for it all the time where you do not expect cases, such as in the aged. People beyond sixty years of age have tuberculosis. I have a very strong feeling that all of those cases passed sixty years of age have had tuberculosis when they were young. I had a case that everybody in this room knows well. She had tuberculosis at the age of seventeen and made a perfect recovery, was married, and had eleven children. At the age of seventy-three she came down with influenza. On examination, I found tubercle bacilli, but she made a complete recovery and died at 84 of another disease.

Dr. J. D. Barrow (Ozan, Ark.): In these young people, children and adolescents, who come to you with evidence of bloody sputum or a slight hemorrhage, do you think you can diagnose minimal tuberculosis from physical examination alone?

Dr. Louis A. Monte (New Orleans): In answer to Dr. Miller, I may state that at one of the clinics held during the recent meeting of the American College of Physicians in St. Louis, Dr. Amberson stated that approximately 95 per cent of their tuberculous admissions at Bellevue Hospital fell into the moderately or far advanced group. This figure compares favorably with that obtained in our admission classification. Regarding age incidence in males as compared to females, we have shown in our series the predominance of pulmonary tuberculosis in the former. As pointed out by Dr. Miller, chronic cough of long duration in an old individual should lead one to suspect pulmonary tuberculosis, although this is not the most frequent cause.

Dr. von Haam inquired about minimal cases having a positive sputum. The five minimal cases in our series were comparatively asymptomatic; one patient, however, developed symptoms while under observation as a suspect because of contact. The diagnosis was made in this group by routine roentgen ray studies, two patients having requested chest plates of their physicians because of contact with open cases of pulmonary tuberculosis. The remaining two were roentgen rayed because of thoracic injury without any idea of finding pulmonary pathology. None of the five cases had a positive sputum.

In reply to Dr. Brooks concerning sedimentation rate studies in these cases, we regret that, due to limited facilities, this procedure was not performed routinely. The nature of this manuscript would render such a study of little value.

As mentioned by Dr. Brown, it is expected that in large hospitals the majority of admissions would be classed in the moderately or far advanced groups. In most instances, this is not due to any delay between the time the diagnosis

is made or suspected and the date the patient enters the hospital. In our series, most of the patients were admitted immediately or soon after the disease was suspected or proved. A small percentage of the cases, however, was treated by attending physicians and in some the adequacy of therapy is definitely questioned. There is no doubt that the tuberculosis problem can be solved only by early recognition and adequate treatment. To attain this goal, much will depend upon extensive educational and public health programs.

Dr. Elliott mentioned the value of physical examination in the diagnosis of pulmonary tuberculosis. While this important procedure should never be omitted in any patient, one must always be aware of its limitations, whether due to intrinsic pathology or due to differences in diagnostic acumen for examination of chest in various physicians. Until the discovery of some other procedure for diagnosis of early tuberculosis, we would suggest that roentgenologic examination is by far the safest and most accurate procedure in our diagnostic armamentarium.

With regard to hemoptysis and physical signs in minimal tuberculosis, we may answer Dr. Barrow by stating that both were absent in our minimal cases and only through the timely use of the roentgen ray were these cases detected.

BEDSIDE DIAGNOSIS AND TREATMENT OF CARDIAC EMERGENCIES*

BEN R. HENINGER, M. D.†
NEW ORLEANS

All practitioners may at some time be faced with a cardiac emergency, and the ability to recognize and to know the proper steps to be taken in such an emergency are no small assets to a physician's diagnostic and therapeutic skill. The drop in the present death rate in acute coronary thrombosis may not be due to a new drug or method of treatment, but to the ability of the profession to recognize the condition with more acumen and to select the best plan of treatment.

A survey of cardiac emergencies, from personal records, is herewith presented; these are listed in the order of frequency of occurrence.

1. Coronary thrombosis, including angina of effort.

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2. Cardiac asthma (nocturnal dyspnea.)
3. Cardiac collapse (acute dilatation).
4. Paroxysmal tachycardia.
5. Acute auricular fibrillation.
6. Syncopal seizures (Stokes-Adams syndrome).
7. Rupture of the heart.

CORONARY THROMBOSIS, INCLUDING ANGINA OF EFFORT

This condition is extremely frequent and is the most important of all heart emergencies. The former belief that coronary disease usually comes on with a sudden, excruciating, precordial pain and that it is a disease of past middle life must now be discarded. It has been my experience to witness at least four cases of coronary thrombosis in the past three years that have come on without any pain whatsoever. The literature is now filled with such case reports.

Coronary thrombosis is usually ushered in by extreme shock and collapse of the systemic circulation. Clinically, it is recognized by profuse perspiration, sudden drop in blood pressure, and in most instances, by a severe pain or oppression near or behind the sternum. This pain differs from the pain of angina of effort in that it can and usually does come on while the patient is quiet or at rest. Following these acute manifestations of thrombosis, in rapid succession, there may develop an irregularity of some type and temperature of low grade. In a few cases, there may be a friction rub, nausea, and even vomiting.

In contrast to this, the pain of angina usually comes on with effort or mental strain, fits of anger or undue emotional stress, and remains with the patient continuously until relief or death takes place.

The pain in coronary thrombosis, even when relieved, and when the acuteness of the condition seems to have abated, has a tendency to return within two or three days after the onset. The blood pressure in an attack of angina of effort is not disturbed, or it may be elevated. There is no change in the rhythm of the heart, no fever, nor intense shock as seen in thrombosis.

The treatment of acute coronary thrombosis must provide for the immediate relief of the pain or distress, which is absolutely essential.

It appears that recovery from the acute attack is in direct ratio to the adequacy and rapidity with which the cardiac pain is alleviated. Some sudden deaths in coronary thrombosis might well have been due to the physician's concern and attempt at too many measures rather than immediate relief of the pain.

The most effective method of combatting the pain is to administer large doses of morphine, hypodermatically, from one-half to three-quarters of a grain. It is best always to carry one-half grain of morphine tablets for such emergencies. It is my usual procedure to give a second hypodermic of morphine, one-quarter grain, if the patient is not relieved within 15 minutes after the initial injection. Even a third dose may be given within 30 to 40 minutes following the first administration. The pain must be relieved, even to the point of decerebration. If the patient is hypersensitive and the attack seems more severe, use sodium amytal, grains 9, just before the patient becomes drowsy from the morphine. If it is desirable that the period of narcosis and complete rest be prolonged, sodium amytal may be continued. If nausea ensues from the morphine, it may be instilled into the rectum by catheter.

All further therapy should be deferred. The acute attack only must be considered for the first 24 to 30 hours after its onset. After that period, gradually and with great care, the follow-up treatment may be begun.

The treatment of an attack of angina of effort has not changed a great deal in the past twenty years, in spite of the many new preparations placed on the market by the commercial pharmaceutical houses. A fresh nitroglycerine tablet, grain 1/100, placed under the tongue, is by far the most efficacious and dependable drug. If there is no relief within five minutes, a second tablet is given, which is generally effective. If the blood pressure was found high upon the first examination, there is now a distinct drop.

There are cases in my records, which, from the mode of onset, appeared to be angina of effort. However, no relief was received from nitroglycerine in adequate doses. Morphine sulphate, hypodermatically, was given in dosage to secure relief of pain. Some of these per-

plexing instances, after careful cardiovascular study, proved to be angina of syphilitic origin.

CARDIAC ASTHMA

This emergency is considered always to accompany some existing cardiovascular pathology. While it seldom occurs with congestive heart failure, it is usually present with disease of the left ventricle (hypertrophy from hypertension or syphilitic heart disease).

Cardiac asthma usually comes on during the night while the patient is in bed, awakening him with a sudden start. It differs from bronchial asthma in that the patient has difficulty in getting air into the lungs, instead of out of the lungs, as in true bronchial obstruction. The patient usually assumes a sitting position and, in most instances, prefers being near an open window, even on the coldest night. In most cases, hypertrophy of the left ventricle has been observed. The diagnosis is made by locating the heaving, displaced apex impulse. Sometimes there is a marked accentuation of the pulmonic second sound at the base, or it may be louder than the aortic second sound. Usually, there is a moderate rise in the blood pressure and if the condition has existed for some time prior to the arrival of the physician, there may be moist rales in the bases of the lung, especially on the left side posterior to the enlarged left ventricle.

The treatment of this condition is the hypodermic administration of the usual doses of morphine and atropine. Relief should be immediate. If available, oxygen may be given. If the patient is already hospitalized, the oxygen tent or nasal tube may be used. Failure to administer the follow-up treatment in cases of cardiac asthma is a greater omission than failure to relieve the emergency. All cases of nocturnal dyspnea (cardiac asthma) call for a most rigid investigation of the cardiovascular system, and immediate institution of treatment is indicated. Paroxysmal dyspnea spells lack of cardiac reserve, lack of muscle integrity, heart failure, wet or dry, and the possibility of sudden death from acute dilatation.

CARDIAC COLLAPSE (ACUTE DILATATION)

This emergency is always secondary to some pre-existing pathologic state of the cardiovascular system, such as hypertrophy of the left

ventricle or the results of a severe toxemia, such as observed in the pneumonias or other infections. More frequently, cardiac collapse follows some profound toxemia on a previously diseased heart or it may occur following a great strain, fit of anger or certain excesses in the heart that has been hypertrophied for some time. Some cardiologists hold that a heart with good muscle, integrity never dilates.

Acute dilatation is recognized, clinically, by a rapid pulse even though the patient is lying down; the blood pressure usually drops and in some cases the drop is rather marked. The patient has an anxious expression and there may be profuse perspiration, with cyanosis in varying degree. Finally, pulmonary edema ensues, this being recognized by fine moist rales at the bases of the lungs.

Recently, I witnessed two such cases of cardiac collapse, both being rather infrequent types.

CASE REPORTS

Patient 1 was a middle-aged man, known to have had rheumatic heart disease for a number of years, who had disregarded all advice concerning overactivity. He was suddenly stricken with type IV pneumonia. Toxemia was marked and overwhelming, and within 36 hours after the onset of the pneumonia, an irregularity developed, recognized as premature beats. Shortly after this, auricular fibrillation took place, with a rapid increase of the pulse rate, a drop in the blood pressure to 95 systolic and a collapse in the circulation. Fortunately, the patient had been in an oxygen tent from the onset of his illness and this fact is probably the reason for his recovery. In spite of this oxygenation, the acceleration of the pulse unbalanced the circulatory system and emergency measures had to be instituted in order to restore a sinus rhythm. Therefore, intravenous doses of thevetin, 3 cat units each, were given up to 18 cat units. The sinus rhythm was restored by the fourth dose and the patient left the hospital apparently improved.

Patient 2, a male, was seen three months previously for a cardiovascular study. He later began to develop nightly attacks of cardiac asthma, and pending decompensation, there was a chronic state of hoarseness. The patient was hospitalized on account of his nocturnal attacks of dyspnea and pending heart failure, and within four weeks had practically regained his cardiac compensation. At this time occurred a hemorrhage from a tumor which completely obstructed the larynx, causing the hoarseness. Anoxemia resulting from this obstruction caused a sudden acceleration of the pulse

rate, resulting in circulatory collapse. The patient was practically moribund until a catheter was passed into the larynx and attached to a tank of oxygen. Later a tracheotomy was performed and within two days the patient had completely recovered; the blood pressure had reached the previous level and rales at the bases had disappeared.

The emergency treatment of cardiac collapse is directed against the accompanying shock and pulmonary edema. Warmth is applied to the patient in the usual way and morphine and atropine are given hypodermatically in conventional doses. Oxygen, by either nasal catheter or tent, is administered in all instances when available. In the hypertensive heart, where there is marked cyanosis, bleeding is a life-saving measure, too frequently overlooked by the physician and yet so simple. Digitalis is contraindicated, there being no experimental evidence of any value that digitalis can increase the output of the heart under circumstances of a collapsed circulation. Recent investigations indicate that the use of digitalis in shock and a collapsed circulation actually diminishes the output of blood from the ventricle.

PAROXYSMAL TACHYCARDIA

Paroxysmal tachycardia occurs quite frequently and generally causes much anxiety, especially if it is the first attack. In the young it is of little significance, except for the discomfort provoked by its onset; it may be the result of emotional acts or intestinal toxemia. In the middle-aged group, it frequently occurs with chronic gallbladder disease. When accompanied by definitely proved cardiac damage, paroxysmal tachycardia assumes major importance.

The condition is recognized by its abrupt onset and likewise abrupt cessation, without any apparent cause. The rhythm of the heart is always regular, the rate being mostly at or above 200 per minute. Sometimes there is marked venous pulsation in the neck, with an expression of anxiety and a cyanotic pallor of the neck and face. All symptoms disappear, to the extreme relief of the patient, when the paroxysm ends.

Various methods of handling this emergency have been suggested. Pressure on the eyeball and carotids may suddenly abate the condition. Tincture of digitalis has been used in rather

large doses with variable results. Several attacks have ended in vomiting. Lately, ergotamine tartrate, one ampoule, has been given intramuscularly. In a series of five cases, three showed almost miraculous results; in two, this treatment failed. The attack usually ceases when least expected, regardless of treatment used. In my experience quinidine has seldom given relief.

A case of paroxysmal tachycardia, associated with arteriosclerotic heart disease, was seen last year. This type is rather persistent when the paroxysm occurs and resists all procedures and medications except the intravenous administration of quinine dihydrochloride, seven and a half grains, repeated in 30 minutes. This treatment, which I prefer when conventional measures fail, terminated the paroxysm in two instances.

ACUTE AURICULAR FIBRILLATION

This emergency is not commonly recognized. It has not received the attention it deserves, and this might explain the reason for frequent failure in diagnosis.

My experience with this emergency has been with arteriosclerotic heart cases, and the condition usually follows some effort on the part of the patient. He suddenly develops an irregular and rapid heart action with marked dyspnea. One case occurred following the slight exertion of raising a window; another, following shampooing the hair.

A white male, in his early forties, was recently observed in the Emergency Clinic at Touro Infirmary. According to the history, the condition had existed over 36 hours before the patient was seen and then suddenly the attack abated within six hours after admission to the hospital.

Clinically, acute auricular fibrillation is recognized by a grossly irregular pulse coming on suddenly, marked dyspnea, some cyanosis, and usually drop in blood pressure and a pulse deficit.

In discussing the treatment, however, I realize that dissension may be provoked. I have never used digitalis, being skeptical about the rate of absorption. One must admit the irritating properties of digitalis and realize too the possible onset of ventricular fibrillation.

I have never seen a fatality following acute auricular fibrillation. This particular emergency may be considered somewhat in the same light as that of paroxysmal tachycardia. These emergencies are cared for by propping the patient up in bed, loosening all tight clothing and reassuring the patient. If any medication is to be given, I suggest a hypodermic of morphine sulphate, one-quarter of a grain. In all cases of acute auricular fibrillation, this procedure has been successful, usually within one to two hours after the onset.

HEART BLOCK

Heart block seldom assumes the role of an emergency, except when there is development of cerebral anemia following encroachment of a major portion of the conduction system of the heart. Usually the basic pathology, arteriosclerosis, has existed for some time when suddenly the seizures of syncope become manifest. Within the past six months two cases of heart block were observed. Both patients died, and a study of serial sections of the conduction system revealed calcareous deposits infiltrating and destroying the nerve pathways.

Clinically, heart block is recognized in a patient by loss of consciousness and drop in the heart rate to 30 or below per minute. At times there are convulsive seizures. The treatment of heart block as an emergency often proves unsuccessful. Modern medicine offers adrenalin, quinidine, and thyroid extract with variable result. Probably the most efficient results to date come from the use of barium chloride by mouth. The drug must be fresh and free from all toxic impurities. Some extraordinary results have been reported from giving barium chloride in Stokes-Adams syndrome.

HEART RUPTURE

This occurs with lightning rapidity, without warning and with inevitable fatality. The patient is found either already dead or he may suddenly gasp and fall dead. This is the end result of coronary disease which causes a softening (myomalacia) of the heart muscle, with ultimate blowing out of the softened area.

SUMMARY

1. The more common cardiac emergencies are enumerated.
2. In coronary thrombosis, the relief of

pain is essential to and seems to be in direct ratio to the patient's recovery from the acute attack.

3. Angina of effort is best treated by tablets of nitroglycerine, gr. 1/100, placed under the tongue.

4. Cardiac asthma always indicates advanced cardiovascular disease, the extent of which should be ascertained after the emergency.

5. Initial attacks of paroxysmal tachycardia assume major importance in the patient above 50 years of age. Most relief measures are not consistent in a series of cases.

6. In the majority of instances, cardiac emergencies must be treated promptly and at once.

FATAL TULAREMIA WITH POST-MORTEM EXAMINATION*

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It is my purpose to report the clinical and pathologic data furnished by three fatal cases of tularemia with postmortem examination.

Reports of pathologic studies in human tularemia are comparatively few. Verbruycke¹ recorded the first autopsied case in 1924, and, from then to the present, the amount of human autopsy material available for study has been quite limited. Gundry and Warner² reviewed the autopsied cases in 1934 and discussed the collected data as to both the clinical and the pathologic features. A similar review was made by Bernstein³ in 1935 who, at the same time, added three fatal cases with post-mortem examination. There appears to be no advantage in recording again the assembled data from the twenty-one cases included in these studies. I have been able to find reports of seven additional fatal cases with postmortem studies. The table summarizes the chief clinical and pathologic features in these cases.

CASE REPORTS

Case 1. V. M., a white male, aged 11, was admitted to the Shreveport Charity Hospital July 2,

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†From the Department of Pathology, Shreveport Charity Hospital.

1934, with conjunctivitis and fever. Except for the usual childhood diseases, he had had no previous illness. Six days prior to admission he went fishing and used rabbit for bait. Two days later he had headache and slight fever. On the following morning he was unable to open his right eye because of swelling of the lids and pus which had crusted along the palpebral borders. A physician was seen who prescribed drops for the eye and the use of warm saline solution as a cleansing agent. The eye showed no improvement and the neck nodes became swollen and painful. The fever continued to rise and pain in the back and legs was quite severe. He felt chilly on several occasions but did not have shaking chills. He perspired profusely.

On admission the temperature was 105.4°, the pulse 120 per minute and respirations 30 per minute. The blood pressure was not recorded. He was restless, semi-rational and appeared acutely ill. Both lids of the right eye were markedly edematous and of a purplish color. The eye lashes were embedded in dried purulent material and there was a moderate amount of pus at each canthus. The conjunctiva showed a marked diffuse congestion and there were many pin-head sized ulcers covered with a purulent discharge in the conjunctiva of the lower lid. The left eye appeared normal. The anterior auricular, the parotid and the submaxillary lymph nodes on the right were considerably enlarged, firm and tender. The right epitrochlear and inguinal nodes were "shotty" in type. There was a slight serous discharge from the nostrils. The mucous membrane of the nasopharynx was injected. Expansion of the chest was free and bilaterally equal. The lungs were normal to percussion and there were no rales. The heart sounds were normal, the rhythm regular and there were no murmurs. The liver and spleen were not palpable. The extremities and reflexes were normal.

Examination of the urine showed a specific gravity of 1.024 and a trace of albumin. The urinary sediment was negative. The agglutination for *B. tularensis* was negative on July 4, but positive in dilution of 1:1280 on July 17, the twentieth day of illness. No other laboratory tests were made.

While in the hospital the high temperature of from 104°F. to 106°F. was maintained until his death. He was irrational much of the time and it was occasionally necessary to restrain him in bed. The conjunctivitis slowly improved. On July 7, physical signs of bilateral pneumonia were present and persisted throughout the remainder of his course. During the last four days the respirations were around 40 per minute, the pulse feeble and rapid and there was a rather marked cyanosis. Death occurred on the twenty-first day of illness.

Autopsy (four hours after death): The body

was that of a poorly nourished white boy of eleven. The right conjunctiva was markedly congested, particularly in its palpebral distribution. A few small, slightly raised, yellowish ulcerations were present in the conjunctiva of the lower lid. The left eye appeared normal. There was a cold sore on the right side of the lower lip. The right submaxillary, the parotid and the preauricular nodes were moderately enlarged and firm. The right epitrochlear and inguinal nodes were palpable as small, firm nodules. The other superficial lymph nodes were not palpable. The abdomen was scaphoid in contour. The thighs and legs were equal in size and showed no pitting edema.

The left pleural cavity contained a liter of yellowish, turbid fluid in which floated stringy masses of unattached fibrin. The upper lobe and diaphragmatic surface of the lower lobe of the left lung were diffusely covered with a fibrinocellular exudate. Small patches of fibrin were present on the posterior surfaces of both the upper and the lower lobes of the right lung. The diaphragmatic surface of the left lung showed

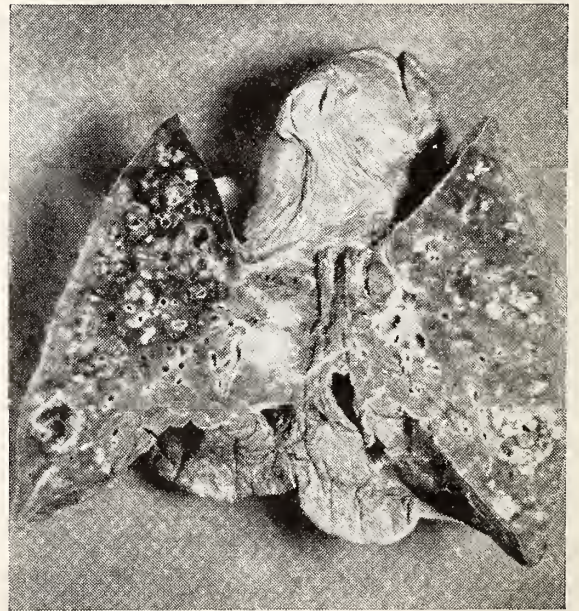


Fig. 1. The left lung from Case 1, showing caseous nodules and cavitation.

three slightly raised, yellowish, sharply demarcated, oval areas that were semi-fluctuant. One of these limited basal abscesses had perforated into the pleural cavity. The upper lobe of the left lung was partially collapsed (compression) while the lower lobe in its upper half and the posterior portion of its lower half contained large areas of consolidation. The lower lobe and the posterior half of the upper lobe of the right lung were solid. The pleural surfaces of the consolidated portions were slightly uneven due to many grayish yellow

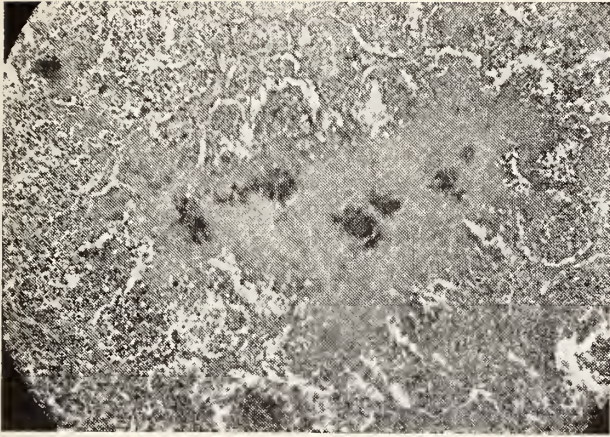


Fig. 2. Section of the lung, Case 1, showing an area of caseation in the pneumonic exudate.

subpleural nodules. Surfaces made by section were similar and showed many oval and irregular yellowish nodules which merged with the surrounding dark red, consolidated lung tissue. The larger nodules showed central softening and, at the base of the left lung, three contained irregular central cavities which were filled with thick, yellow purulent material. The bronchial mucosa was congested and the bronchi contained a purulent exudate. The tracheobronchial nodes were markedly enlarged and a few contained small abscesses and grayish yellow areas.

The pericardium was normal and contained an ounce of clear amber colored fluid. The heart was of normal size. The myocardium was pale, soft and moderately swollen. There were no organic lesions of the valves. The lining of the coronary arteries and aorta appeared normal.

The peritoneum was normal. The abdominal cavity contained no free fluid.

The spleen weighed 230 gm. There were small patches of fibrin on its dark red capsular surface. Many small yellowish foci were visible through the capsule. On section numerous yellowish foci, rang-

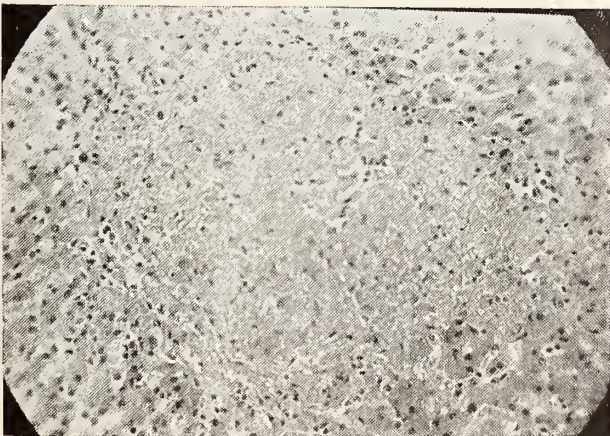


Fig. 3. Section of liver, Case 1, showing necrotic focus.

ing from 1 to 3 mm., were found on the soft, dark red surfaces. The Malpighian bodies were largely obscured.

The liver was moderately enlarged and its capsular surface was smooth. Many minute, brownish red, subcapsular hemorrhages were visible. The cut surfaces were pale and cloudy and showed an occasional yellowish fleck. The gallbladder was normal.

The lymph nodes along the upper border of the pancreas, at the pyloric end of the stomach and in the porta hepatis were enlarged and some contained areas of caseous necrosis.

The mucosa of the esophagus, stomach and intestines showed no lesions. The pancreas was slightly softer than normal.

The kidneys, aside from some enlargement and congestion, appeared normal. Their combined weight was 350 gm. The cortical zones of the adrenals were pale and swollen.

The ureters, urinary bladder and prostate were normal.

The bone marrow and brain were not examined.

Microscopic Examination: Sections from the lungs showed a confluent, exudative pneumonia with areas of caseous necrosis which varied in size. Large mononuclears, lymphocytes and fibrin were the chief constituents of the exudate. Polymorphonuclear leukocytes were scant and observed mainly about the necrotic areas. On the whole the exudate appeared to be in a rather poor state of preservation. Interstitial involvement was quite marked in some areas. The perivascular and peribronchial tissue, as well as the septae, were thickened by edema and cellular infiltration. In some areas the alveoli were packed with leukocytes while in others a few large mononuclears, erythrocytes and edema were present. The cytoplasm of the large mononuclears in some areas was foamy and vacuolated. The bronchi in the affected areas contained an exudate which in some instances showed caseation. Swelling and proliferation of the vascular endothelium was not striking and thrombus formation was not observed. There was no cellular reaction at the peripheries of the necrotic nodules. They showed gradual or abrupt transition from caseous necrosis to exudative pneumonia. Giant cells were not observed. The pleura showed a fibrino-cellular exudate, the cellular element of which resembled that of the pneumonia.

The liver showed many focal necroses without regular relationship to anatomic structure. These contained detritus, pyknotic nuclei and blood. When contiguous with the portal canals lymphocytes were present at their peripheries and occasionally in the necrotic detritus. In other foci a peripheral reaction of any type was lacking. Giant cells were not found. The hepatic cells were more granular than normal.

Sections from the spleen showed many caseous areas which varied both as to size and shape. The necrotic centers contained a few widely scattered nuclei showing pyknosis and karyolysis as well as chromatin particles. In this respect there was considerable variation. Some of necrotic areas were completely caseous without traces of nuclear structure while others had much of the normal structure remaining. A slight fibroblastic proliferation was observed at the peripheries of some of the foci. The concentration of monocytic cells appeared to be no greater at the borders of the caseous areas than in the outlying splenic tissue. Epithelioid and giant cells were uniformly absent. There was diffuse reticulo-endothelial hyperplasia. The pulp cords were thick and cellular and the venous sinuses were small. The sinuses contained endothelial leukocytes and were lined in many instances by cuboid cells. Brownish pigment within phagocytic cells was present throughout the section.

The histopathologic changes observed in the tracheobronchial, pancreatic, gastric and hepatic lymph nodes were similar. The margins of the caseous abscesses showed a dense exudative inflammation which stained quite poorly. The cells composing the exudate were chiefly monocytic but polymorphonuclears were present. Many of the arterioles and venules of this region were thrombosed. The blood vessels in the outlying zone showed endothelial swelling. The caseous foci were quite similar to those in the spleen. Reticulo-endothelial hyperplasia was marked and diffuse. Large phagocytic cells containing debris, pyknotic nuclei and erythrocytes were present. The nodes from the neck were not examined.

Some tubular degeneration was noted in the kidneys. Sections from the heart, pancreas, adrenals and stomach showed no noteworthy changes.

Bacteria, morphologically consistent with *B. tularensis*, were stained in sections from the lungs. Animals were not inoculated.

Case 2. M. C., a 45 year old colored housewife was admitted to the Shreveport Charity Hospital April 3, 1935, with headache and fever. The past history was not obtained. On or about March 20 she dressed and cooked a rabbit. Four days later she awoke with a headache and muscle pains in the back and legs. During the day she had a chill, developed high fever and was troubled a great deal with nausea. She noticed at this time that a superficial cut in the skin on the right index finger was sore and festering. The right axilla was sore and painful. During the following ten days she was largely confined to bed at home with high fever, headache and severe aching in the back and legs. She was frequently nauseated and sometimes vomited. Sweating was profuse at times. In the meantime the skin abrasion had

become ulcerated and the right axillary region, more painful and swollen.

On admission the axillary temperature was 103°F., pulse rate 140 and respirations 34 per minute. The systolic blood pressure was 100 and the diastolic 70. She was fairly well nourished and appeared acutely ill. The sclerae showed an icteric tinge. The mucosa of the nasopharynx was markedly congested but showed neither membrane nor ulceration. An ulcer, measuring 8 mm. in diameter, with an irregular and undermined margin, was present on the dorsum of the middle phalanx of the right index finger. Its base was covered with a brownish red, purulent exudate. The lymph nodes in the right axilla were enlarged, firm and tender. There was no other superficial lymphadenopathy. Expansion of the chest was thought to be limited on the right but the breath sounds were clear and the lungs normal to percussion. The heart was normal in size, the rate was regular and there were no murmurs. The abdomen was moderately distended and slight tenderness was general. The border of the spleen was felt at the costal margin. The liver was not palpable. The external genitalia appeared normal. The reflexes were not tested. There was no edema.

Examination of the urine showed a specific gravity of 1.022, a trace of albumin and finely granular and hyaline casts. The Kahn was negative. There were 12,200 leukocytes with 87 polymorphonuclears, 8 lymphocytes and 5 mononuclears. Her blood serum agglutinated *Bacterium tularensis* in the dilution of 1:320.

She expired March 4, 17½ hours after admission and on the eleventh day of illness.

Autopsy (three hours after death): The body was that of a well nourished negroess of middle age. The right pupil was twice the diameter of the left and measured 8 mm. There was slight icterus of the sclerotics. An ulcer, with an irregular, undermined margin and measuring 1 cm., was present on the dorsum of the middle phalanx of the right index finger. The right axillary lymph nodes were large and firm. The abdominal wall was slightly bulging. There was no edema.

The pleural cavities were completely filled by the voluminous lungs. There were fibrous adhesions at both apices. Numerous petechial hemorrhages were present in the visceral pleurae. On section the dependent portions of both lungs showed congestion and edema while the apical and anterior portions were pale and inflated with air. Two shot-sized, subpleural calcified nodules were present in the lateral aspect of the right lower lobe. The bronchial mucosa was congested. The large bronchi were filled with pinkish froth. The tracheobronchial nodes were grayish black and firm. A right peribronchial node was partly calcified.

The pericardial sac contained 45 c.c. of clear

amber colored fluid. A few petechiae were present in the epicardium at the base of the ventricles. The heart weighed 300 gm. The myocardium was uniformly pale red and rather soft. All of the valves were normal. There was slight atherosclerosis of the coronary arteries and the aorta.

The peritoneum, except in the pelvis where there was old inflammatory adnexal disease, appeared normal. The abdominal cavity contained no free fluid. There was rather marked gaseous distension of the colon.

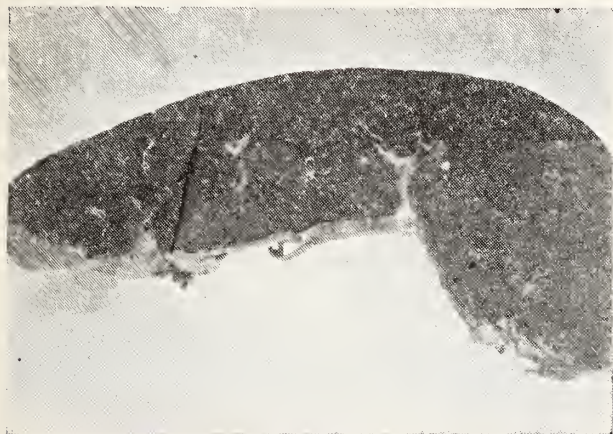


Fig. 4. The spleen from Case 2, showing miliary and nodular areas of necrosis.

The spleen was considerably enlarged, weighing 500 gm. It showed at its midportion a deep scar. There were thin, white scars in the capsule. On section small abscesses and grayish yellow nodules were seen on the dark purple, soft surfaces.

The liver weighed 1750 gm. and its capsular surface was smooth. The cut surfaces were slightly cloudy and swollen and showed widely scattered yellow foci. The lobular markings were accentuated. The hepatic nodes were enlarged and contained grayish yellow areas. The gallbladder was normal.

The pancreas was normal. The nodes along its upper border were enlarged and their cut surfaces showed necrotic areas.

The combined weight of the kidneys was 350 gm. The capsules came away, leaving smooth grayish red surfaces. On section the architecture appeared normal. The renal pelves, ureters and urinary bladder were normal. The adrenal medullae were gelatinous.

The mucosa of the esophagus, stomach and intestines presented no noteworthy changes.

The corpus uteri weighed 40 gm. and its lining was smooth and thin.

The lymph nodes in the right axilla measured up to 2 cm. in diameter and contained abscesses and caseous nodules.

The meninges and brain appeared normal.

Microscopic Examination: There were edema

and congestion of the lungs. Sections from the heart showed slight fibrosis of the myocardium. The vessels in the brain and meninges were engorged but otherwise these tissues appeared normal. The tubular epithelium of the kidneys was ragged and granular and there were hyaline and granular casts in the tubules.

The liver showed quite extensive involvement. Low power fields would include two or more necrotic foci or fail to include a single large focus. The appearance of the separate foci was variable. In some, coagulative necrosis was almost complete with an occasional pyknotic nucleus or nuclear fragments persisting in the hemorrhagic detritus. Such areas merged abruptly with the surrounding liver parenchyma without evidence of a marginal productive or exudative inflammatory reaction. In other areas, usually quite small, nuclear concentration resulted from loss of cytoplasm, closer approximation of the Kupffer's cells and infiltration by a few polymorphonuclears. Slight proliferation of fibroblasts was observed at the margins of some of the larger foci. Giant cells were uniformly absent. In addition to these changes the hepatic cells were more granular than normal and fatty change was observed mainly in the peripheral and midzonal areas of the lobules. There was moderate diffuse congestion.

Sections from the spleen showed marked diffuse congestion. The Malpighian bodies were widely spaced and their borders were congested. Many small and large areas of coagulative necrosis were observed throughout the sections. As in the liver, these showed varying degrees of change. The earliest change appeared as foci of swollen, indefinitely outlined cells with poor nuclear and cytoplasmic staining. In other areas caseous necrosis was evident, but nuclear fragments and pyknotic nuclei were abundantly present. In the center of some of the foci caseation was complete. Marginal proliferative or exudative reaction was not observed. Giant cells were not found. Caseation involved both the Malpighian bodies and the pulp.

The histopathologic changes of the lymph nodes showing macroscopic lesions were similar. The marginal zones of the abscesses were composed of poorly stained exudate consisting chiefly of mononuclear cells. In their poor state of preservation it was difficult to make an exact classification as to cell type. Polymorphonuclear leukocytes were seen occasionally. Swelling of the endothelium and proliferative endarteritis were observed in the small arteries in the outlying tissue. Some of the arterioles and venules in the inflammatory zone contained thrombi. The caseous foci were quite similar to those observed in the spleen. In general, the nodes showed rather marked hyperplasia of the reticulo-endothelium. Many large phagocytic

cells containing nuclear fragments and leukocytes were observed.

Sections were not taken from the cutaneous ulcer.

Attempts to stain bacteria in tissue sections were unsuccessful. There were no animal inoculations.

Case 3. S. M., a negro boy, aged 12, was admitted to the Shreveport Charity Hospital December 2, 1936, with a cough and fever. The history obtained from a twin brother at that time did not suggest tularemia. The clinical features were those of typhoid fever which was considered the most likely diagnosis until the day of death when a cutaneous ulcer and axillary adenitis, previously overlooked, were found.

The following history was obtained from the patient's father in retrospect: Eight days prior to admission he had caught and dressed a rabbit. On the third day following he had fever, sore throat and generalized aching. A cutaneous abrasion on the left index finger, thought to be due to a briar scratch, was sore and festered and there was some tenderness in the left arm pit. He began coughing on the second day of illness. At first the cough was dry but soon became productive of a thick, yellowish sputum which was never blood streaked. In spite of bed rest and purgatives, the fever continued high and he became delirious.

On admission the temperature was 104°F., pulse 130 per minute and the respiratory rate was 40. The blood pressure was not recorded. He was well nourished, delirious, restless and appeared acutely ill. There was a slight mucopurulent discharge from the nostrils. The tonsils were enlarged and the mucosa of the nasopharynx was diffusely congested. Expansion of the chest was bilaterally equal. The lungs were normal to percussion and there were no rales nor pleural friction rubs. The heart was normal in size. The heart sounds were heard distinctly, there were no murmurs and the rate was regular. The spleen and liver were not palpable. The extremities were negative except for a small ulcer on the inner surface of the left index finger. The left epitrochlear and axillary lymph nodes were enlarged and firm.

On December 3, the white cell count was 6,250 with 88 polymorphonuclears, 7 lymphocytes and 5 mononuclears. The red cell count was 4,750,000 and the hemoglobin was 90 per cent. The blood smears were negative for malaria. The Kahn was negative. The urine was negative. On December 5, the white cell count was 3,600 with 60 polymorphonuclears, 28 basket cells, 10 lymphocytes and 2 mononuclears. On December 9, the white cell count was 8,750 with 54 polymorphonuclears, 34 basket cells, 9 lymphocytes and 3 mononuclears. The Widal was negative on December 11.

Roentgen ray of the chest showed broncho-

pneumonia on December 7. Throughout his course in the hospital the temperature maintained a high level, ranging from 101°F. to 104.4°F. by axilla. He was irrational, restless and it was necessary to restrain him in bed much of the time when he was not asleep. Moist rales were heard in the base of the left lung five days prior to death. He developed stiffness of the neck but the spinal fluid was under normal pressure and was normal to laboratory tests. During the last two days he was in coma and cyanosed. Death occurred December 13, the nineteenth day of illness.

Autopsy (two hours after death): The body was well developed and well nourished. The lymph nodes in the left axillary and epitrochlear regions were enlarged and firm. A cutaneous ulcer, measuring 8 mm., was present on the inner surface of the middle phalanx of the left index finger. The skin bordering the ulcer was macerated. There was neither edema nor jaundice.

The pleural cavities contained neither exudate nor transudate. The visceral pleurae showed many petechial hemorrhages. A solitary caseous nodule,



Fig. 5. The left lung from Case 3, showing a solitary caseous nodule..

measuring 15 mm. and showing a soft center, was found centrally located in the lower lobe of the left lung. A relatively thick zone of pneumonia surrounded the nodule. Both lungs showed moderate diffuse congestion and edema. The lining of the bronchi was grayish red and appeared normal. The lymph nodes surrounding the left main and lower bronchi measured up to 2 cm. in diameter and contained solid and soft caseous nodules. The perinodal tissue was edematous.

Petechiae were present in the visceral pericardium. The heart weighted 210 gm. and the myocardium was grayish red and fairly soft. All of

the valves and the coronary arteries were normal. The thymus weighed 10 gm.

The peritoneum was smooth and of normal color. The abdominal cavity contained no free fluid.

Several linear, superficial ulcerations, suggesting tears in the mucosa due to overdistension, were present in the esophageal lining at its lower end. There was a small triangular, superficial ulcer, with a smooth congested base, in the mucosa of the greater curvature of the stomach near the pylorus. There were no changes in the lining of the intestines. The mesenteric lymph nodes were small, pink and of normal consistency.

The spleen weighed 160 gm. Many small, grayish yellow foci were visible through the smooth capsule. On section numerous grayish yellow foci, ranging from 1 to 4 mm., were seen on the dark red, soft surfaces.

The liver weighed 1350 gm. and its capsular surface was smooth. The cut surfaces were swollen, cloudy and friable. Necrotic areas were not seen. The lymph nodes about the pancreas and in the porta hepatis were enlarged and contained soft and solid caseous nodules.

The pancreas appeared normal.

The combined weight of the kidneys was 310 gm. The capsules stripped easily, exposing pale smooth surfaces. The cut surfaces were pale and softer than normal. The cortical striations were widened and were distinct. The renal pelves, ureters, urinary bladder and prostate were normal. The adrenal cortices appeared swollen and there was lessening of the yellow color.

The brain and bone marrow were not examined.

Postmortem blood agglutinated *B. tularensis* in a dilution of 1:640.

Microscopic Examination: The margin of the pulmonary nodule was caseous with many pyknotic nuclei persisting in the detritus. It merged with a relatively thick zone of surrounding pneumonia in which the alveolar septae were poorly or well preserved but the exudate within the alveoli was necrotic. In the more outlying pneumonic zone

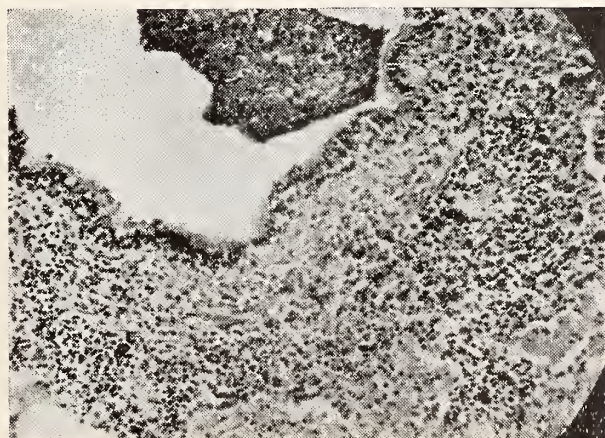


Fig. 6. Section from the lung, Case 3, showing bronchial and interstitial involvement.

the exudate was better preserved. Here its constituents could be identified. Large mononuclears predominated and usually showed a foamy cytoplasm. The bronchi contained an exudate which in some instances was partly caseous. Interstitial involvement was marked. Vascular changes and giant cells were not noted.

Sections from the lymph nodes showing macroscopic change were similar in respect to the es-

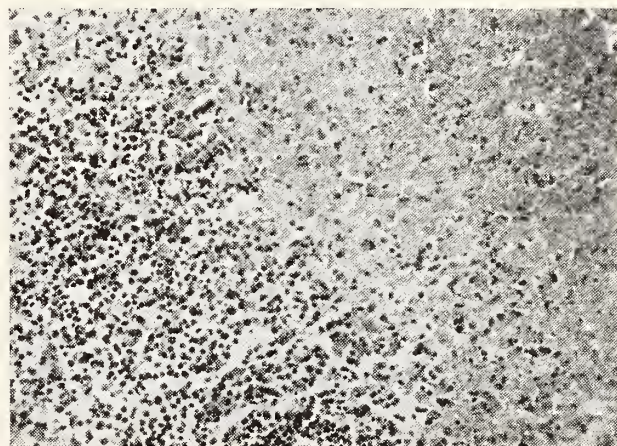


Fig. 7. Section of a lymph node, Case 3, showing caseous necrosis and endothelial hyperplasia.

sential lesion. They showed many small and large areas exhibiting varying degrees of caseation. Focal mobilization of endothelial leukocytes appeared to represent a pre-necrotic stage. Reticulo-endothelial hyperplasia was fairly diffuse and brown pigment within cells was abundant. Macrophages containing debris, leukocytes and erythrocytes were numerous about the softened caseous nodules. Vascular changes were not striking and thrombus formation was not observed. The capsules and perinodal fat were edematous and infiltrated with leukocytes.

Sections from the spleen showed many necrotic and semi-necrotic foci, involving both pulp and lymphadenoid structure, which were similar to those observed in the lymph nodes. There was no demonstrable productive or exudative reaction at the margins of the nodules. Reticulo-endothelial hyperplasia was marked and diffuse. Brown pigment, chiefly within cells, was abundant. Vascular changes and giant cell formation were not observed.

Focal necroses were abundantly shown in the sections from the liver. Although these showed no constant relationship to anatomic structure, their occurrence in the peripheral or central zones of the lobules was infrequent. The appearance of the separate foci differed only in the degree of coagulative change present and in the presence or absence of slight leukocytic infiltration. They contained varying amounts of detritus, pyknotic nuclei, erythrocytes and, in some instances, a few poly-

morphonuclear leukocytes. A marginal proliferative or exudative reaction was uniformly absent. Giant cells were not observed. The Kupffer's cells were much more prominent than normally and contained, in many instances, clumps and granules of brown pigment. Some of the portal canals showed many phagocytic cells filled with brown pigment which appeared both granular and amorphous. The hepatic cells were granular and there was slight diffuse fatty metamorphosis.

The microscopic features of the ulcers in the esophagus and stomach were consistent with those

of simple acute ulcerations. Specific features were lacking.

The cutaneous ulcer extended well into the subcutaneous area and its base was caseous. In the edematous subjacent zone and at the margins a cellular inflammatory reaction, chiefly monocytic, was observed. The productive reaction was slight and giant cells were not observed.

Sections from the kidneys and adrenals showed cloudy swelling. The myocardium appeared normal.

SUMMARY OF AUTOPSIED CASES

Author	Contact	Incu- bation period	Type	Dura- tion	Clinical character- istics	Distribution of Lesions
Beck and Merkle ⁵	Rabbit	1 day	Typhoid	12 days	Meningeal symptoms	Stomach, intestines, glands, spleen and liver
Amos and Sprunt ⁶	Rabbit	8 hr.	Typhoid	13 days	Diarrhea, pneumonia	Lymph nodes, lungs, spleen and liver
Sugden ⁷	Deer fly	6 days	Ulceroglandular	20 mo.	Bacterial endocarditis	Aortic and mitral valves
Sugden ⁷	Deer fly	4 days	Ulceroglandular	14 days	Meningitis? pneumonia	Lymph nodes, lungs, spleen, liver and pleura
Pessin ⁸	Deer fly or ticks	3 days	Typhoid	64 days	Diarrhea, pneumonia, pericarditis	Lymph nodes, lungs, spleen, liver, pericardium, adrenal, buccal mu- cosa, tongue and pleurae
Kavanaugh ⁹			Oculo- glandular	12 days		Glands, lungs, spleen, liver and pleura
Pund and Hatcher ¹⁰			Ulceroglandular	10 days	Pneumonia, meningitis	Forearm, glands, lungs, spleen, liver, meninges, appendix, thymus, uterus and adrenal
Mathews	Rabbit	2 days	Oculo- glandular	21 days	Pneumonia	Conjunctiva, nodes, lungs, liver and spleen
Mathews	Rabbit	4 days	Ulceroglandular	11 days	Generalized infection	Skin, glands, spleen and liver
Mathews	Rabbit	3 days	Ulceroglandular	19 days	Pneumonia	Skin, glands, lungs, liver and spleen

DISCUSSION

An analysis of the autopsied cases reveals that the clinical type of disease was ulceroglandular in 23, oculoglandular in two and typhoid in six. The high incidence of the ulceroglandular type parallels its clinical prevalence and does not appear to be significant.

The average duration to death in 29 cases was 20 days. Of this group, the shortest time to death was four days, the fulminant case reported by Simpson¹¹, and the longest duration was 64 days. Two cases ran protracted clinical

course and appear not to have been tularemic deaths. Bruecken's patient (reported by Francis and Callender¹²) died of hemolytic streptococcus septicemia 21 weeks after the onset of illness. Mesenteric infarction secondary to bacterial endocarditis caused the death of Sugden's⁷ patient 20 months after the onset of illness. Both the aortic and mitral valves were fibrotic and ulcerated but there were no microscopic descriptions, bacteriologic studies or animal inoculation. In view of the similarity of the gross pathology to that of chronic rheumatic valvulitis with com-

plicating subacute bacterial endocarditis, it seems unwise to accept this case as a tularemic death on clinical features alone.

The autopsy data indicate that the most common sites of tularemic lesions are the skin, lymph nodes, lungs, spleen and liver. Although involvement of other tissues and organs has been uncommon, isolated examples of tularemic lesions have been recorded in practically all of the organs. A case of tularemic encephalitis was described by Hartman¹³. Meningitis was first reported by Bryant and Hirsh¹⁴ and quite recently by Pund and Hatcher¹⁰. Bacteriologic proof of a third case of tularemic meningitis was furnished by Haizlip and O'Neil¹⁵. Necrotic foci in the adrenals were observed by Francis and Callender¹² and subsequently by Pessin⁸ and by Pund and Hatcher¹⁰. Bardon and Berdez¹⁶ have recorded the only case that has shown tularemic lesions of the kidneys. The case of a man who had eaten insufficiently cooked rabbit and showed mucosal ulcers in the stomach, duodenum, ileum and cecum at autopsy was reported by Beck and Merkle⁵. The gastrointestinal ulcers were considered the portals of entry of the infection. Tularemic lesions of the peritoneum were observed by Schumacher¹⁷, by Foulgert⁴, et al, by Gundry and Warner² and quite recently by Pund and Hatcher¹⁰ in association with tularemic appendicitis. Fibrinous and caseous pericarditis and ulcerative stomatitis with glossitis of tularemic origin were present in Pessin's⁸ case. One of Bernstein's³ cases had tularemic infection of the tonsil. Pund and Hatcher¹⁰ found lesions in the thymus and endometrium in their case.

COMMENT

The gravity of clinical signs of pulmonary involvement in the course of tularemia is emphasized by the fact that 24 of the autopsied cases have shown lesions of the lungs. The type of pulmonary lesion has varied, described as lobar pneumonia, abscess, cavitation and pleurisy with or without effusion. In earlier studies of autopsy material only the caseous lesions were considered to be due to tularemia. The outlying and more diffuse pneumonic patches were interpreted as secondary bronchopneumonia. More recently the demonstration of *B. tularensis* in the pulmonary exudate by Massee¹⁸ and by Foulger, Glazer and Foshay⁴

has furnished strong support for the view that the exudative pneumonia, as well as the caseous, is due to the tularemic infection. We were able to stain bacteria, morphologically consistent with *B. tularensis*, in the pulmonary exudate of our first case only. Notwithstanding the indication that all types of pulmonary lesions in tularemic infection are due to this etiology, it should be emphasized that a coexistent bronchopneumonia of other bacterial origin may be present as was illustrated in one of Bernstein's³ cases.

Attention has repeatedly been called to the resemblance of pulmonary tularemia to pulmonary tuberculosis. It is likely at times that pulmonary tularemia has been mistaken for tuberculosis. The microscopic changes resemble closely tuberculous caseous pneumonia except that they do not suggest distribution by aspiration. Several observers have referred to vascular endothelial and subendothelial changes with thrombus formation and have suggested a relationship of these to the necrotic changes. Striking vascular changes were not observed in the two cases of the present series showing pulmonary lesions.

Tularemic involvement of the central nervous system is not an unimportant feature of the visceral pathology. Francis and Callender¹² in 1927 first suggested on the basis of clinical features that meningeal or cerebral lesions were probably present. In 1928 Francis¹⁹ reported that five of 24 fatal cases had died in coma. The existence of tularemic meningitis was first demonstrated by Haizlip and O'Neil¹⁵. In their fatal case with meningeal symptoms there was no autopsy, but injection of the spinal fluid produced tularemia in a guinea pig. Later Bryant and Hirsch¹⁴ reported a marked pleocytosis in the spinal fluid of a case with clinical symptoms of meningitis and the presence of leptomeningitis at autopsy. Hartman's¹³ case, admitted with fever and delirium, showed diffuse encephalitis without meningeal lesions. Quite recently Pund and Hatcher¹⁰ have recorded the case of a 12 year old negro girl who died in coma on the tenth day of her illness. Brudzink's and Kernig's signs were positive and the spinal fluid contained 114 cells per cu. mm. At autopsy tularemic lesions were found in the meninges and in submeningeal brain tissue.

SUMMARY

The case histories and the autopsy findings of three patients who died of tularemia are presented.

One of the patients in the present series showed neither pulmonary nor central nervous system tularemic lesions at autopsy. The chief clinical and pathologic features were those of a generalized infection. Fatal cases of this type have previously been reported by Goodpasture and House²⁰ and by Palmer and Hansmann²¹.

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DISCUSSION

Dr. E. von Haam (New Orleans): The presentation of Dr. Mathews was very timely, because tularemia is on the increase in New Orleans. In the hospital we have observed cases of tularemia, and also in private practice cases of tularemia have been observed in increased number, especially around Christmas time when housewives buy rabbits and skin them for cooking.

How infectious tularemia is can best be proved by a patient in the hospital who died, and while assisting at the autopsy of this case one of the nurses infected herself with the material and contracted tularemia. Fortunately, it was not a severe case.

The diagnosis of tularemia can definitely be made by agglutination. However, if tularemia is not suspected the diagnosis will not be made, because the agglutination will not be taken routinely, unless especially requested. From a biopsy, I believe tularemia can be recognized and differentiated from tuberculous lymph glands from the fact that polymorphonuclear leukocytes can be found in the chronic lesions which cannot be found in tuberculosis.

Dr. Daniel W. Kelly (Oak Grove): I think this is one of the most interesting subjects we have had for discussion, something that is of interest to the poorer classes as they are the people who have tularemia. Every doctor in this audience who lives in the country has treated tularemia. He may not have made that diagnosis, but there is plenty of it. We see it all through north Louisiana. I am sure lots of it has never been diagnosed.

I saw my first case two or three years ago. It is a very important disease, and in my opinion the Board of Health in the state should make a survey on tularemia. I think it would be some of the best money that could be spent to work among the poor.

Dr. T. D. Boaz (Shreveport): I had the privilege of seeing the first case Dr. Mathews presented here, that of a patient who died in Charity Hospital some years ago, in 1934, I believe. An eight or nine year old white boy was brought in, very sick, delirious most of the time, and the eyes were inflamed, but no attention had been given to the eyes. The lids were glued together, and I was called into the general ward to see the child's eyes.

On opening the eyes, I observed those characteristic discrete ulcers found mostly in the lower sulci, and they remained discrete, with a characteristic yellowish appearance and gluey material that came out of them, but they became enlarged and covered almost all the conjunctival surface.

This little fellow remained desperately sick, and his pre-auricular, submaxillary and cervical glands were enlarged, but none of them suppurated. I had been told that glands that became infected with tularemia usually suppurated and it is best not to open them, but to let them remain in their inflamed state as long as possible, probably hoping to develop some immunity through that source. These glands did not suppurate. The child went on and, as Dr. Mathews said, I believe, died of a septic pneumonia with other involvement. It impressed me very much. In the first place, that infection through the eyes would cause a fatality.

Another phase of the case which impressed me was in observing and learning the diagnosis of tularemia through eye infection. There is no doubt that this disease is increasing. It is sweeping the country. It is going clear back to my former state of Kentucky, and the farmers and people generally ought to be taught not to handle the animals that carry this infection. Something ought to be done about it. Dr. Kelly made a good suggestion, that the Board of Health should be informed of this condition and should make an intensive drive to combat it.

Dr. L. T. Baker (Dixie): I have had several cases of tularemia. Some physicians seem to think the rabbit is the only animal that transmits tularemia. There have been case reports where the disease has been transmitted by quail, cat, squirrel, skunk, ground squirrels, wild rat, wild mice, muskrat, sheep, tick, opossum, woodchuck and some game birds.

SURGICAL INTERVENTION IN ACUTE LARYNGEAL OBSTRUCTION*

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MONROE, LA.

Although I hope to be pardoned for reviewing a procedure which is known as one of the oldest surgical operations, according to Sir St. Clair Thomson 2000 years old, I have drawn a modicum of consolation from the words of Jackson, who in 1935 said: "It is a curious fact, and it might be added a very sad fact, that tracheotomy is today more often done badly than any other operation in the whole field of clinical surgery". It has alternately risen and fallen in medical favor due to bad results from improperly performed tracheotomies. Never-

theless the O'Dwyer intubation method and more recently aspiration through direct laryngoscopy have not superseded the ancient operation. Today it is the procedure of choice or necessity in roughly 90 per cent of cases of acute laryngeal stenosis.

PERSONAL CASES

This paper is based on a meagre personal experience in a small series of 19 assorted cases, including: bulbar palsy, one; phlegmon of neck, two; bilateral peritonsillar abscess, one; subglottic edema of larynx of unknown origin, one; gumma of larynx, one; carcinoma of larynx, one; traumatic cicatricial stenosis of larynx, one; multiple papillomata, one; laryngotracheitis, two; laryngeal diphtheria, seven; post-thyroidectomy tracheal collapse, one. Mortality in this series was 31.5 per cent, but in no case was death directly attributable to the operation.

THE LITERATURE

A review of 17 cases of laryngeal diphtheria with 13 tracheotomies from the records of Hillman Hospital, Birmingham, Alabama, over the years 1931 to 1934, inclusive, added nothing of significance to the available literature other than to confirm the general opinion that the earlier surgical intervention occurred and the better the postoperative care, the lower the mortality. Witness a change from 66 per cent in 1931 to 16 per cent in 1934. Platou and Hilleboe report a 24 per cent mortality in 772 cases of laryngeal diphtheria and 50 per cent in 80 cases of non-diphtheritic laryngitis. I see no reason to detract further from an already overworked subject by quoting statistics.

TREATMENT

It should be quite needless to mention here that in the sudden severe laryngeal obstruction as may occur with a foreign body, the trachea should be opened even if death has apparently occurred, for there may be a chance of resuscitation.

In the gradually increasing dyspnea, such as that encountered in diphtheria and subglottic edema, where intubation is impractical or impossible, there is nothing to be gained by permitting the respiratory center to exhaust itself. When a patient with obstructive dyspnea is restless and has definite indrawing of the

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

suprasternal notch, intercostal and epigastric regions, relief should be obtained surgically. There is no condition whatever except obstruction of the airway above the clavicle, usually the larynx, that will produce this type of respiration. It is not seen in the dyspnea of cardiac disease, pneumonia, croup, asthma, nor any intrathoracic condition. The patient is drowsy, but he dare not sleep because, as he relaxes, suffocation causes him to waken with a violent start. This means impending asphyxia, and the skin gradually becomes pale and cold but not cyanotic. At this stage the mortality rises sharply in spite of clearing the air passages.

Diphtheria antitoxin given at this point will not change the immediate course of affairs for the better but rather will increase the stenosis by swelling and slough. The question then arises as to what procedure, in general, is safer in relatively unskilled hands, intubation or tracheotomy. Intubation must be reserved for the more skilled and in cases of minimal severity, provided such instruments are at hand and the patient can be constantly attended by one experienced in the technic. Direct methods of introduction have simplified this procedure considerably. An intubation may prove more satisfactory and less formidable in the brief acute inflammatory swellings of the larynx as seen in certain exanthematous diseases, notably scarlet fever, measles, and streptococcic laryngitis². It may apply also in angioneurotic edema and that caused by local trauma or instrumentation. On the other hand I believe tracheotomy would be infinitely safer and easier for the less adept. Even though he may not have a cannula, the operator can handle the situation with no more than a sharp knife, a few hemostats, and a cool head. Damage can be done by either method, but should improper tracheotomy be done in an emergency, it is a simple matter to do a good low operation a few hours later with all needed preparation and leisure.

Laryngotomy, stabbing of the cricothyroid membrane, and the so-called high tracheotomy, above the thyroid isthmus, are mentioned only to be condemned. Should such a case present itself, it is good surgery to do a proper operation and allow the higher wound to close. The high incidence of cicatricial stenosis with the consequent years of treatment of the enforced

wearing of permanently placed cannulas is only too well known.

After describing the objectionable laryngotomy and cricothyroidotomy, textbooks take up high and low tracheotomy, giving the impression that the former is very easy to do, the latter requiring greater dexterity and much time. Again I uphold Jackson in his decrying of all but low incision of the trachea. There is nearly always ample time to do his two-stepped, finger-guided incision. This requires making one long, vertical, midline skin incision and dissecting down bluntly and blindly to the tracheal rings with the finger of the left hand. Then, the fingers guiding, the lowest rings possible are cut, the cannula inserted, and any bleeding staunched. As long as the chin is kept in a straight line and all sharp dissection is done in the midline, no dangerous hemorrhage can occur, nor can any important structures be divided. Should the patient stop breathing due to compression when the head is thrown back, still there will be time to do this type of operation and institute artificial respiration. If the patient is in a clinic where a bronchoscope can be introduced quickly, there is immediate relief, and the subsequent surgery is done leisurely by cutting down on the instrument.

TECHNIC

The following technic, to be used where time is not the most important factor, is essentially that of Jackson. With the patient in the recumbent position and the nose pointed exactly toward the zenith, only the skin and subcutaneous tissues need be infiltrated with procaine. A liberal vertical incision from the prominence of the thyroid cartilage to the suprasternal notch is preferable to the transverse incision of Russell. The ribbon muscles are divided bluntly in the midline, and the isthmus of the thyroid gland pushed upward or divided between ligatures. Should the inferior thyroid vein be exposed, it is wise to ligate since erosion by infection and pressure of the cannula may cause fatal secondary hemorrhage. Sclaepter reports two such cases on the ninth and seventeenth day after operation.

All bleeding should be controlled at this point. The cricoid cartilage having been identified, the tracheal rings are exposed by blunt dissection guided by palpation. Then, while the

trachea is steadied with two fingers or a tenaculum, the third, fourth, and fifth rings should be divided with a continuous vertical incision, care being taken not to injure the posterior tracheal wall and the esophagus lying immediately behind. Meanwhile an assistant has been retracting the thymus gland, which in small children resembles pulmonary tissue in appearance, movement, and its tendency to suck air back and forth in the wound. There is no advantage to be gained by removing a button-like piece from the trachea, a time-wasting procedure, which encourages the formation of permanent fistula. St. Clair Thomson¹⁴ and Figi³ recommend injecting cocaine into the tracheal lumen, but this advice is questioned. The most valued ally and assistant in removing blood and secretions is the cough reflex, and therefore all the blood that may be coughed into our faces should be tolerated cheerfully.

The lips of the trachea are separated gently with a small two-bladed forcep or Trousseau dilator, and a correct sized tube is inserted with obturator in place. The wound is never sutured except occasionally when one or two sutures are placed at the upper part of an unduly long incision, packed lightly with gauze soaked with 1/10,000 bichloride of mercury. Though recommended by Russell,¹¹ it is deemed unwise to suture as this favors infection, emphysema, and consequent danger of secondary hemorrhage and fatal mediastinitis. It also makes difficult the re-insertion of the cannula.

A fold of gauze split half-way is now slipped under the tube, the tapes securely tied, and a thin, moist square of gauze laid over the tube. The obturator is tied to the neck tapes for convenient safe-keeping, otherwise invariably it will be misplaced in even the best regulated institutions. The advantages of this method as outlined are that it can be done in five minutes or less, and there is less danger of laryngeal stenosis.

AFTER CARE

In regard to after care I feel that more is to be said here than the time allotted will allow. It may seem platitudinous to say that the tube must be kept open at all costs. Many children have died of asphyxia due to lack of attention postoperatively and the death certificate honestly read pneumonia because tracheal or bronchial

obstruction will cause an impaired percussion note at the lung bases. As a matter of fact pneumonia is an exceptionally rare complication.

The tracheotomized patient must never draw an unwatched breath. He cannot call for help. However we do leave a large bell—not the usual buzzer—for the older patients who are nearly ready for decannulization. There are three main reasons for obstruction of the tube. These are, in the order of their frequency: (1) inspissated mucus; (2) escape of tube from tracheal wound caused by coughing or swollen neck tissues; (3) extraneous foreign bodies such as corks or gauze. The properly fitting, clean tube makes no hissing sound with normal respiration.

A suction machine with rubber catheter attached must be kept at the bedside and used to draw out secretions as soon as they accumulate. The inner cannula may be kept clear by the use of ordinary moistened pipe cleaners. But often the mucus becomes so thick and tenacious that these measures become useless, and mucus plugs may require removal through the bronchoscope. On one occasion asphyxiated child was resuscitated when such a plug was dislodged by placing the mouth to the tube through a piece of gauze and expiring forcibly. Fortunately it was coughed up immediately thereafter.

To prevent this occurrence a few drops of saline or mineral oil¹¹ may be introduced occasionally into the tracheotomy tube. Digestants such as caroid have been tried with some degree of success. However, if fluids are forced, a steam inhalator kept going at all times, and such expectorants as tincture of ferrous iodide started as soon as the patient leaves the operating room, very little annoyance will be experienced. I feel so strongly about this that such drugs are always used now, and if I were forced to choose between its use and a suction apparatus, the former would be preferred. The nurse, or as is often the case, the patient, must sponge away all secretions as they are coughed up to prevent them from being drawn back.

Clean tubes and instruments to aid in introduction must be kept close at hand. I have found that a clean silver cannula is best left in

place the first 36 to 48 hours. By that time the tracheal rings will remain open, and the change of cannula may be effected daily thereafter with great ease and very little discomfort to the patient. Opiates and atropine are strictly taboo, the former depressing the cough reflex and the respiratory center, the latter causing the secretions to thicken. Decannulization can be carried out in four to six days in the average diphtheria or foreign body case, the patient being tested by obstructing the tube or by using smaller sized tubes. Should the air passage still be blocked after this much time has elapsed, look for: (1) a membrane or swelling which has not subsided or a foreign body not removed; (2) adductor spasm; (3) edema of glottis or subglottic region; (4) pretracheal or laryngeal abscess; (5) granulations due to erosion from use of too large a cannula; (6) cicatricial stenosis of healed ulcer.

CONCLUSION

Let me insist on an early rather than a delayed tracheotomy, a low rather than a high tracheotomy when symptoms point to severe laryngeal obstruction. Early and orderly tracheotomy is a relatively minor procedure and, when considered apart from the condition from which it is done, is attended with a mortality of not more than one-fifth of one per

cent. Intubation is reserved for the minority of cases and for experienced and equipped operators.

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CHANGE OF DATES FOR 1938 ANNUAL MEETING

Your attention is directed to the fact that the Executive Committee of the State Society has found it necessary to change the dates of our 1938 Annual Meeting to May 2-4. The dates previously selected, namely, April 25-27, upon investigation were found to conflict with a large convention to be held in New Orleans at that time. The Executive Commit-

tee, desirous of having our State Meeting at a time when the members, as well as our scientific meetings, would not be cramped by any other meetings, thought it best to make the change in the dates. We hope and feel assured that this change will not interfere with the plans and attendance of our various members.

If you recall, the last meeting in New Orleans in 1935 was probably the most successful held in the history of our organization. Dr. Cassius L. Peacock of New Orleans is Chairman of the Committee on Arrangements for the approaching meeting, and, with his experience and earnestness in his work, it can be well prophesied that the forthcoming meeting will equal if not excel that of 1935. In these various affairs we ask for your cooperation and, by all means, your attendance at this function. It is only by this that your officers can really know and appreciate whether their efforts in your behalf are successful. To please the State Medical Society motivates their actions.

P. T. T.

DEATH IN THE SEXES

In the monthly Statistical Bulletin* put out by the Metropolitan Life Insurance Company there are frequently many interesting data which are not available elsewhere or, if they are, are obtained with difficulty. Recently there has been published a table, together with appropriate comments, on the sex ratio mortality for certain causes. These facts have to do with persons between the ages of one and 74 years. It is to be noted that striking differences are exhibited as cause of death between the two sexes. Of course there can be no comparison between the diseases incident to womanhood and the diseases from which only a man might die but taking the diseases that may cause death in both sexes the highest per cent male of female rate is 867 in alcoholism, with a death rate in males, per 100,000, of 5.2 as contrasted with the other sex in which it was 0.6. Ulcer of the duodenum and the stomach is the next important disease which

* Statistical Bulletin, Metropolitan Life Insurance Company, 18: 7, 1937.

causes many more deaths in the male than in the female. A man is murdered very much more commonly than a woman and likewise the males are more prone to severe mental depression, or at least have the requisite courage to commit suicide, as the rate of the one is 19.3 compared to 5.6 in the other sex. About four times as many men are killed as result of accidents as are women and about three men may die as the result of the late effects of syphilis to one woman. Angina pectoris and coronary artery disease have always been known as disorders peculiar to the male sex. This is confirmed by the death rate, again roughly three times as many males as females die as result of these disorders. Arteriosclerosis and pneumonia show a per cent rate of 160 and 153 respectively. Rather surprising is it that tuberculosis causes more deaths amongst male portions of the population than the female. Here the rate is 150.

More men die as result of the common causes of death than do women, with a few exceptions. Death rate in cancer is about equally divided between the two sexes but women predominated to a slight degree. In pernicious anemia and pellagra as well as diabetes there is a distinct tendency for a more lethal outcome amongst women than men. Exophthalmic goiter is the only disease in which there is a markedly increased number of females dying as result of this disorder than males, practically five out of every six deaths being of the female sex.

There is a preponderance of male deaths from so many diseases that it would seem fair to assume that the diseases peculiar to women must cause the death of a very considerable group of females. If more men than women die of poliomyelitis or appendicitis, erysipelas, heart disease, malaria, leukemia, nephritis, influenza and a host of other diseases, there must be a corresponding number of deaths in the female sex and these must be from causes from which a man can not die.

STATE MEDICINE

When one considers that which, it is to be hoped, is a remote possibility, namely the drafting of medical men into the Federal Gov-

ernment in large numbers, one is struck with very definite impressions of the inefficiency of many of the Federal organizations. Of course the activities of the P. W. A. workers have been a theme for joksters ever since the P. W. A. has become active. When one considers that first class mail, often of considerable value, disappears after it goes into the letter box to be gone forever and when many other Governmental activities are characterized by their looseness and carelessness, one wonders if exactly the same state of affairs might not develop in the practice of medicine if the individual physician is not working on his own initiative and for himself but upon orders from above. Certainly it would seem that the height of efficiency is obtained nowadays in the general practice of medicine. Patients are taken care of honestly, faithfully and conscientiously. For the most part they receive the best that medical science affords and whether rich man or pauper he can and does obtain expert medical advice and care. If medical service was placed in the hands of bureaucrats would such be the case? Would there be greater efficiency in the care of the sick than there is now? It is much to be doubted.

CANCER OF THE STOMACH

Morley*, Professor of Surgery at Manchester University, Manchester, England, discusses cancer of the stomach from several points of view, a few of which will be mentioned below. The other statements and facts he has to present will be omitted.

In England the stomach is the commonest location for cancer within the body. There were slightly under 13,000 deaths from this cause in 1936 and probably a few thousand more which were not diagnosed properly. In a general way one-third of all cancers in men are in the stomach and one-fifth in women in the same place. The relation of sex is as six is to five. It is to be noted also that while this is a disease commonly seen in patients over 40, when it does occur in younger indi-

* Morley, John: Carcinoma of the stomach, *Brit. Med. J.*, Nov. 13, 1937, p. 949.

viduals always the malignancy is more virulent than in the older person.

Morley, in discussing predisposing factors, takes up two or three rather important theoretic considerations which in many places are looked upon as factual. He says, for example, that he does not think, except in the very unusual case, that gastric ulcer predisposes to cancer. He substantiates his opinion by quotations from various students of the condition and then points out that, whereas chronic ulcer in 82 per cent of the cases occurs in the middle two-thirds of the lesser curvature and only 12 per cent in the prepyloric region, but in cancer 66 per cent are found in the prepyloric region and only 13 per cent in the region which is the favorite site of ulcer. The author states that these figures speak eloquently against any close connection between ulcer and cancer. Again 90 per cent of hour-glass stomachs occur in females who have a history of ulcer extending back 20 to 30 years. If irritation from gastric ulcer brought about cancer, surely the incidence of cancer should be highest in this region. An example: in 128 carefully studied cases of hour-glass stomach only one female and two males were proved to have cancer. Another substantiating fact is that the average duration of cancer symptoms is twelve months, whereas in ulcer, chronic in character, symptoms are present for ten plus years.

Morley also discusses the relation of gastritis to cancer, largely because the distinguished gastroenterologist, A. F. Hurst, has maintained that cancer is predisposed to by an absence of free hydrochloric acid and who says he has never seen a case of cancer in which free hydrochloric acid was present in the early stage. The author disposes of Hurst's contention by quoting a few cases of gastric cancer which were known to have hydrochloric

acid prior to the development of cancer and he also says that free hydrochloric acid may be found in the gastric juice of about 30 per cent of patients with cancer of the stomach.

Another disturbing, discomfoting feature of gastric cancer is the fact that it is not recognized sufficiently early to be curable. The author gives no facts nor data from which to make the diagnosis in the early stages of this devastating malignancy when operation might cure the sufferer.

To substantiate the statement that cancer of the stomach is rarely curable the figures of Morley might be quoted concerning 207 patients who have been under his care. Fifty-eight of these had a gastrectomy but in the remaining 149 patients the disease had advanced so far that only a palliative operation could be done or else nothing was attempted. Of the 58 patients on whom gastrectomy was performed, 24 per cent died immediately. Twenty-eight who survived the operation died from recurrences and only a few, 14 in number, still survive. Six of these have been living for less than two years after the operation.

The mortality figures for gastric cancer are horribly disheartening. They indicate that most certainly in the cure of this type of cancer no progress has been made. Cancer of the stomach should be discovered early but it is not, and no investigator has as yet been able to find a way to get to this disease when operation would be successful. It seems that it might be a wise idea in periodic health examination of individuals past the age of 40 to have gastric analysis made and possibly to have roentgenologic study of the stomach made at the same time. It might be that these procedures would be of as much value in finding gastric cancer as a routine electrocardiogram is in discovering early anatomic changes of the heart.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held in the Nurses' Lecture Room of Hotel Dieu on Monday, December 20, 1937.

The meeting was called to order by the president, Dr. H. E. Bernadas, and with the secretary, Dr. J. A. LaNasa, at the desk.

The scientific program consisted of:

1. Clinicopathological Conference: Report of a Case of Aleukemic Leukemia by Dr. M. Couret. Dr. Kriz read the autopsy report. This case was discussed by Drs. Tripoli and Jamison.
2. Scleredema Neonatorum with Presentation of Case Reports by Dr. Edwin A. Socola. Discussion was given by Dr. Mattingly.

A recess of one minute was ordered by the chairman after which the meeting resolved into Executive Session. The meeting was then adjourned.

HIGHLAND SANITARIUM

The staff of the Highland Sanitarium held its monthly meeting on January 20, 1938 in the Clinic Building, following dinner at 7 p. m. Dr. J. S. Shavin was unanimously elected to membership on the staff.

The program consisted of a series of reports of cases recently treated in Highland Sanitarium.

Dr. T. P. Lloyd reported the case of a young woman having had intractable diarrhea for the past four years with episodes of high fever and extreme prostration. On stool examination, patient was found to have strongyloides infestation. Clinical examinations, including eight negative blood cultures, revealed no other lesions. Following gentian violet therapy, she made remarkable recovery and left the sanitarium. Unfortunately, patient returned this morning again having diarrhea and prostration, strongyloides being present once more. Miss Jess Ogden discussed the laboratory diagnosis of strongyloides referring to differentiation from *Necator americanus*.

Dr. W. M. Scott presented the case of a patient 40 years old who was seen last August having high fever, chills and a large tender mass in the upper left quadrant of abdomen. This rapidly disappeared under conservative treatment, gradually returning. In January the abdomen was explored by Dr. J. A. Hendrick and a retroperitoneal tumor found. When opened, a profuse discharge of about six ounces of necrotic and broken down tissue was removed. Examination of the tissue by Dr. Mathews revealed sarcoma, possibly originating from the suprarenal cortex.

Dr. E. D. Rowland presented a patient who had gradually increasing dyspnea for several years.

Sputum examinations were negative for tuberculosis. He had been exposed to asbestos and sand as a pipe line fitter. Roentgenogram of the chest showed a fibrosis and emphysema, indicating probable asbestosis or silicosis.

Dr. J. A. Hendrick reported case of a patient having had a normal appendectomy, who, four days after operation, vomited. The Wangensteen suction apparatus was brought into the room; the patient having seen this apparatus used on his brother, who recently died following generalized peritonitis and neglected appendix, immediately became frightened and his pulse increased from 74 to 160. This persisted until the following day when the suction apparatus was removed from the room and the patient reassured. He then quickly returned to a normal convalescence and recovery.

Albert Owers, M.D., Secretary.

FACULTY CLUB LOUISIANA STATE UNIVERSITY MEDICAL CENTER New Orleans

The November meeting of the Faculty Club of Louisiana State University Medical Center was held on Friday, November 26, 1937 at 8 p. m. on the fourth floor of the Medical Science Building, with the President, Dr. P. J. Carter, presiding.

PROGRAM

Liver Function after Gum Acacia Injection. (W. W. Hall, Department of Biochemistry): The deposition of acacia in the hepatic parenchyma of four dogs after repeated intravenous injection (total injected 8-10 gm. per kilo) resulted in a reduced blood sugar tolerance curve to glucose and especially galactose. This would presumably indicate a diminution in liver function affecting carbohydrate metabolism. The plasma protein level was reduced, indicating an evident damage for the serum protein metabolism of the liver. Alteration of the clotting mechanism of the blood, especially the lowered fibrinogen content, has resulted in failure to clot or in formation of small, fragile and fibrous clots and a longer bleeding time.

Modern Treatment of Syphilis (James W. Tedder, Department of Dermatology and Syphilology): In the discussion of any disease of such a protean nature as syphilis it must be realized immediately that no hard and fast rules can be applied. In general, it may be stated that in the early cases of primary and secondary syphilis, we first treat the disease, and in the latent and tertiary type of syphilis, we treat the individual, other factors being equal. In the first group, the primary objective is to secure a serologic, a symp-

tomatic and a biologic cure, while in the second, we strive for a symptomatic cure.

Only the various well tried drugs can be mentioned. It would be well to stress the point that one should have clinical proof of a drug's effectiveness before using it routinely. The patient should be rendered non-infectious as rapidly as possible, without overlooking the fact that the following reactions may be due to the therapeutic measures taken: (1) Herxheimer's reaction; (2) nitrotoxic or angioneurotic syndrome; (3) post-arsphenamine dermatosis; (4) post-arsphenamine jaundice; (5) blood dyscrasias; (6) renal injuries; (7) nerve injuries, and (8) the so-called therapeutic paradox.

The outline for the continuous treatment of the early primary or secondary syphilitic is as follows:

First week—First day: Bi-salicylate, 1 grain, in oil intramuscularly (same dose at all times). Second day: Neoarsphenamine, 0.3 gm., intravenously. Third day: Bi-salicylate, 1 grain, in oil intramuscularly. Fourth day: Neoarsphenamine, 0.3 gm., intravenously. Fifth day: Bi-salicylate, 1 grain in oil intramuscularly. Sixth day: Neoarsphenamine, 0.3 gm., intravenously. Seventh day: Bi-salicylate, 1 grain, in oil intramuscularly.

Second to fourth week—Neoarsphenamine, 0.6 gm. weekly. Check blood and urine.

Fifth to tenth week—Bi-salicylate weekly; neoarsphenamine, 0.6 gm. with fifth and tenth injection.

Eleventh to sixteenth week—Neoarsphenamine, 0.6 gm., weekly.

Seventeenth to twenty-eighth week—Bi-salicylate weekly; neoarsphenamine, 0.6 gm., with first and last injection.

Twenty-ninth to thirty-fourth week—Neoarsphenamine weekly.

Thirty-fifth to forty-sixth week—Bi-salicylate weekly; neoarsphenamine, 0.6 gm., with first and last injection.

Forty-seventh to fifty-second week — Neoarsphenamine weekly. Blood and spinal fluid Wassermann.

The total therapy during the first year continuously includes neoarsphenamine, 30 injections and bi-salicylate 34 injections. If the Wassermann reaction and spinal fluid are negative, two courses of therapy should be given the second year, following which the patient may be discharged with instructions to return for a Wassermann test every three months. If the spinal fluid shows evidence of positive changes, or the Wassermann reaction has failed to remain negative, further therapy is indicated. Beyond this stage, individualization of each case is necessary. A safe rule is to treat the patient for one year after a negative

Wassermann reaction and spinal fluid have been obtained.

Parasitic Infestation of the Appendix (Rigney D'Aunoy, J. R. Schenken and E. S. Moss, Department of Pathology and Bacteriology): This paper will appear in full in the near future.

Presentation of Case: So-called Chronic Bacillary Dysentery (George F. Fasting, Department of Pathology and Bacteriology): The patient was a white male, aged 34, with a history suggestive of intermittent dysentery for the past three years. The blood was positive in titer of 1:640 for the Flexner type. Treatment consisted of high vitamin diet and vaccine from stock strain of Flexner dysentery bacillus. Infected teeth were removed. From a weight of 77 pounds, the patient gained 54 pounds in 79 days, and showed satisfactory clinical improvement.

HUTCHINSON MEMORIAL CLINIC

Scientific session conducted by the Department of Otolaryngology, Dr. J. R. Hume, presiding:

The Viewpoint of the Otolaryngologist in Orbital Infections (Dr. Lucian W. Alexander, Department of Otolaryngology): Orbital infections may arise in connection with suppuration of both the anterior and posterior group of sinuses. From the viewpoint of the rhinologist this complication of sinusitis may be better understood if it is remembered that the anterior group (the frontal sinus, the anterior ethmoidal cells, and the maxillary sinus) is contiguous to the roof, the medial wall, and the floor of the orbit; while the posterior group (consisting of the sphenoid sinus and the posterior ethmoidal air cells) is in immediate relationship to the posterior half of the wall of the orbit, and to the superior orbital fissure and optic foramen. Therefore, complications occur chiefly as a result of the position of the sinus, the extreme thinness of the sinus walls, and the presence of congenital or necrotic dehiscences in the walls. In consequence of this anatomic relationship there may arise, as a result of suppuration in the anterior group of cells (the frontal, anterior ethmoid and maxillary sinus) chemosis, edema of the lids, orbital periostitis and abscess (generally subperiosteal), and dacryocystitis; while suppuration in the posterior group (the sphenoid and posterior ethmoid) may be associated with retrobulbar neuritis, optic atrophy, and paralysis of the ocular muscles.

Pathogenic organisms may spread to the orbit, as a result of caries and absorption of the bony wall of the sinus, through congenital dehiscences, through the small venous channels communicating with the ophthalmic veins in the orbit, and possibly also by lymphatic vessels.

The symptoms of orbital infections are swell-

ing, edema, and redness accompanied by closure of the eyelids and intense pain occurring at once. Pressure upon the eye sets up intense pain. The eyeball may protrude, and then be turned upward, outward or downward according to whether the infection originates in the antrum, ethmoid, or frontal sinus. Abscess formation with discharge of pus outwardly sometimes takes place, resulting in fistula. If not relieved great destruction of orbital tissue may occur with the total loss of vision in the affected eye.

The diagnosis of orbital cellulitis is made from a history of infection, lid edema, proptosis, limited ocular rotations, pain to backward pressure of the globe, unilaterality, early impairment of vision and the presence of pus in the adjacent sinus. Cavernous sinus thrombosis symptoms are quite similar to those caused by adjacent sinus diseases. The history of a chill, with headache, septic temperature, swelling of the eyelids, and an exophthalmos, which begins on one side and in one or two days involves the other eye also, are pathognomonic of cavernous sinus thrombosis. Panophthalmitis, tumors of the orbit, orbital emphysema, paralysis of extra-ocular muscles and pulsating exophthalmos should also be distinguished.

Treatment depends on the particular type of pathology that is present at the time the patient is first examined. Mild cases of orbital cellulitis will usually subside by the use of ice compresses locally and shrinking solutions in the nose. Provision for adequate intranasal drainage and ventilation is imperative. Measures to improve intranasal drainage include the use of vasoconstrictor drugs that do not inhibit the ciliary activity of the nasal mucosa. Neosynephrin 1-4 per cent solution and ephedrine sulphate 3 per cent solution are the drugs that have given the most satisfactory results. Other measures that are useful to improve the ventilation and drainage of the sinuses include inhalation of tincture of benzoin, infra-red lamp, the Dowling tampon, and the Proetz displacement treatment of sinusitis. In young children the use of irrigations may be very dangerous due to the infection being transmitted to the eustachian tube and middle ear, resulting in an acute otitis media. In cases of spontaneous rupture of the sinus into the nasal chambers a mild suction may be useful to cleanse the nasal passages as the nasal mucosa is wonderful for the absorption of the toxic products from pus. To cleanse the nasal passages of a baby a smooth, soft, round-end rubber catheter is attached to the suction and the suction should be so regulated that not more than three pounds of suction may be used. After the instillation into each nostril of four drops of neosynephrin 1-4 per cent solution or ephedrine sulphate 3 per cent solution,

the rubber catheter is inserted into one nostril and the pus removed by gentle suction. In a like manner the pus is removed from the other nostril. This procedure should be repeated as often as is necessary to keep the nasal passages clean. A mild silver salt or antiseptic solution may be instilled into each nostril after each treatment. These patients do better if placed in a hospital with a suction in the room and a nurse in constant attendance.

In severe cases of orbital cellulitis that do not subside in a few days, surgical drainage is indicated. A curvilinear incision is used in the external operation, separation of the periosteum, examination of the bony orbit and evacuation of the pus is attempted. A drainage tube is inserted into the wound and the wound is left wide open for drainage. After the acute symptoms have subsided, a radical operation is usually done to remove the focus of infection. A like procedure is followed in cases of subperiosteal abscess. In cases where an orbital abscess has formed, the orbital wall and periosteum are exposed as in a subperiosteal abscess and if both are found to be intact, an incision is made into the orbital fascia and the pus is drained. It is well to locate the pus pocket with a two-inch hypodermic needle before opening the orbital fascia. In an occasional case where pus is not found, it may be necessary to do a radical operation to decompress the orbit and so prevent extension to the cavernous sinus and the meninges and also to relieve pressure on the optic nerve.

Measures to eradicate the focus in the sinus should be as conservative as possible and a radical sinus operation on the involved sinus would be considered as conservative treatment in such cases. Where the focus is present in the frontal sinus the operation of choice is the Lynch radical frontal operation. When the ethmoid air cells are involved, the operation of choice is Hume's ethmoidectomy. The operation of choice on the maxillary antrum is the Caldwell-Luc.

In all patients with ocular symptoms an ophthalmologist should be consulted and the outlined treatment discussed with him.

J. T. NIX CLINIC

New Orleans

At a meeting held in January, Doctors Fortier and Gately presented the following paper:

HEMANGIOMA OF THE VERTEBRAE

Hemangioma of the vertebrae, while clinically rare, has been shown by the work of Makrycoskas and Topfer to be very common at autopsy, although rarely producing symptoms. When one considers the common occurrence of angiomata in other portions of the body, the frequency in the vertebrae should cause no surprise. Virchow,

in 1863, described the first recorded case in an old woman, with an associated hemangioma of the liver. In 1827 Makrycostas found 41 hemangiomas of the vertebrae in 12 bodies. Stimulated by the findings of Makrycostas, Topfer in 1928 examined the vertebrae of 2,154 bodies. He found angiomata of the vertebrae in 257 cases or 11.93 per cent. In 34 cases multiple vertebrae were involved.

While the great majority of the cases occur in adults between 30 and 50, they have been reported at all ages from one year to ninety years. Particularly, for some unaccountable reason, they are more common in females in the ratio of 13 to 8. They arise mostly from the bone marrow but may spring also from the periosteum. They have been divided into the capillary, arterial, venous and cavernous types with the cavernous type the most common.

They occur practically always in the dorsal and lumbar spine and particularly in the lower dorsal area. The size of the lesion is variable, from very small to the complete invasion of one or more vertebrae.

As stated before, the majority of the cases are symptomless, because they are limited to the body of the vertebrae. When symptoms occur, they are due to an invasion of the spinal canal by the tumor, or a collapse of the vertebral body or laminae producing pressure on the spinal cord and a compression myelitis. There is a progressive weakness of the lower limbs and eventually, a paraplegia.

The roentgen findings are characteristic, although they may be overlooked if the radiologist is not alert. Then too, because of the rarity of symptom-producing cases, the changes, even if seen by the radiologist, may be misinterpreted. There is irregular absorption of the bony trabeculae and thickening of the remaining vertical trabeculae, producing parallel vertical striations in the bodies of the vertebrae, together with a loss of the normal homogenous structure in the

roentgenogram. The presence of these vertical striations is the chief x-ray finding on which the diagnosis is based. The abnormal trabeculations may extend into the vertebral arches and laminae, and the adjacent vertebrae may be involved. Hanson attempts to explain the involvement of two adjacent vertebrae by the fact that occasionally their blood supply is received from a common branch artery. The intervertebral discs are rarely involved, probably because of the absence of a direct blood supply.

The vertebral bodies may show a slightly greater transverse diameter and slightly less depth than the normal body above and below. Injury may serve to accentuate this compression and widening. If the transverse and spinous processes are involved they, also, may show greater dimensions than normal.

While various authors list tuberculosis, lues, Kummell's disease, sarcoma, myeloma, metastatic tumors, intervertebral disc nodes, osteomalacia, gout, and Paget's disease as conditions to be considered in the differential diagnosis, it would seem that Paget's disease is the one condition where serious difficulty would be encountered in differentiating. Lack of pathologic findings in the long bones and skull would tend to exclude Paget's. A determination of the serum phosphatase, which in Paget's is elevated, would also be of assistance.

The treatment of choice is irradiation therapy, Kaplan stating that these tumors are as responsive to irradiation as superficial growths of the same histology. High voltage x-ray therapy is administered to the affected vertebra in small doses, repeated at intervals of several weeks until the desired result is obtained. Usually 500 R in doses of 100 R per day is given at monthly intervals. The response is slow but favorable in most instances. In the presence of pressure symptoms, surgery may have to be resorted to and the prognosis of such cases is bad, the majority becoming bed-ridden and dying of intercurrent infection.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

- | | | | |
|-------------|---|--------------|---|
| February 1. | Eye, Ear, Nose and Throat Hospital Staff, 8 p. m. | February 7. | Board of Directors, Orleans Parish Medical Society, 8 p. m. |
| February 2. | Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m. | February 7. | Pathologic Conference, Hotel Dieu, 8:15 p. m. |
| February 2. | Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m. | February 9. | Clinical Pathological Conference, Charity Hospital and L.S.U. Medical Center, 2 p. m. |
| February 2. | Hutchinson Memorial Clinic Staff, 8 p. m. | February 9. | Touro Infirmary Staff, 8 p. m. |
| February 2. | Mercy Hospital Staff, 8 p. m. | February 11. | French Hospital Staff, 8 p. m. |
| | | February 14. | ORLEANS PARISH MEDICAL SOCIETY, 8 p. m. |

- February 15. Charity Hospital Medical Staff, 8 p. m.
- February 16. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- February 16. Clinical Pathological Conference, Charity Hospital and L.S.U. Medical Center, 2 p. m.
- February 16. Charity Hospital Surgical Staff, 8 p. m.
- February 17. Eye, Ear, Nose and Throat Club, 8 p. m.
- February 18. I. C. R. R. Hospital Staff, 12 noon.
- February 21. Hotel Dieu Staff, 8 p. m.
- February 22. Baptist Hospital Staff, 8 p. m.
- February 23. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- February 23. Clinical Pathological Conference, Charity Hospital and L.S.U. Medical Center, 2 p. m.
- February 25. L.S.U. Faculty Club, 8 p. m.
- February 28. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.

During the month of January, the Society held its annual Installation Meeting and one scientific meeting.

The annual Installation Meeting of the Orleans Parish Medical Society was held Monday, January 10. The following program was presented:

Invocation: Rev. Dunbar Hunt Ogden, Pastor of the Napoleon Avenue Presbyterian Church.

Relationship of Dentists to Physicians: Rev. Father Harold A. Gaudin, S.J., President, Loyola University.

The Doctor and the Graduate School: Dr. Roger P. McCutcheon, Dean, Graduate School, Tulane University.

The Function of the State University: Dr. James Monroe Smith, President, Louisiana State University.

Address of Retiring President: Dr. James T. Nix.

Inaugural Address: Dr. Shirley C. Lyons.

The following officers for 1938 were installed: President: Dr. Shirley C. Lyons.

First Vice-President: Dr. Edgar Burns.

Second Vice-President: Dr. H. Ashton Thomas.

Third Vice-President: Dr. Lucien A. Fortier.

Secretary: Dr. Gilbert C. Anderson.

Treasurer: Dr. Edwin H. Lawson.

Librarian: Dr. Donovan C. Browne.

Additional Members Board of Directors:

Dr. Isidore Cohn

Dr. George H. Hauser

Dr. James T. Nix

The Woman's Auxiliary had charge of the refreshments and social hour following the meeting.

NEWS ITEMS

Dr. Ernest Carroll Faust, of the Department of Tropical Medicine, School of Medicine, Tulane University, attended the meetings of the American Association for the Advancement of Science (December 27-January 1) in Indianapolis, Ind.

At the meetings Dr. Faust was elected four-year Councilor of the American Society of Tropical Medicine, having previously filled the Councilorship in this Society (1931-1935), and Secretary of the Secretaries' Conference.

Election of Dr. Edwin L. Zander as president of the medical staff of Mercy Hospital marked the annual dinner of the executive board held January 5, 1938.

Dr. Zander succeeds Dr. John F. Dicks. Other officers elected at the meeting are Dr. Roger Mailhes, vice-president; Dr. Edwin R. Guidry, secretary, and Dr. Carroll F. Gelbke, treasurer. Dr. Dicks and Dr. John J. Irwin were named members of the executive board.

Colonel Charles F. Craig addressed the Mississippi Public Health Association at its annual meeting in Jackson, Mississippi, December 9, upon the control of amebiasis, and the Laboratory Section of the Association upon the diagnosis of amebiasis.

Dr. James T. Nix, Dean of the Graduate School of the Louisiana State University Medical Center, addressed the Issaquena-Sharkey-Warren Counties Medical Society in Vicksburg, Mississippi, January 11. The subject of Dr. Nix's address was "The Economic Phase of Medical Practice."

Dr. Walter J. Otis of the De Paul Sanitarium was elected chairman of the Hospital Council of New Orleans, organization of hospital executives of the city, January 13, 1938. He succeeded Dr. A. J. Hockett, superintendent of Touro Infirmary.

Dr. Val Fuchs, of Hotel Dieu, was named vice-president and Frank Groner, of Baptist Hospital, secretary-treasurer. A buffet supper at De Paul Sanitarium followed the meeting.

Numerous prominent educators and outstanding professional figures participated in the three-day inaugural program for Dr. Rufus C. Harris, as tenth President of The Tulane University of Louisiana, January 16 through 18.

Of special interest to the medical profession was the Symposium on University Medical Education, at the Hutchinson Memorial, Monday, January 17. Charles Cassidy Bass, Dean, School of Medicine, Tulane University, presided. The program included:

Preventive Medicine, Its Outlook in Medical Education: Waller Smith Leathers, Dean, School of Medicine, Vanderbilt University.

The Quest of the Teacher in Medicine: Alphonse Mary Schwitalla, S.J., Dean, School of Medicine, St. Louis University.

The Orleans Parish Medical Society congratulates Tulane University on its selection, and expresses best wishes to Dr. Harris. We will stand ready at all times to cooperate with him and the University.

At a recent meeting of the Staff of French Hospital, the following officers were elected: Dr. Joseph Palermo, chairman; Dr. Maurice Lescale, vice-chairman; Dr. R. E. Rougelot, secretary.

REMOVALS

Dr. Philip J. Bayon from 1403 Delachaise Street to 632 Maison Blanche Building.

Dr. H. Ashton Thomas from 913 to 922 Union Building.

Dr. I. M. Gage has been appointed Chairman of the Scientific Essays Committee for 1938. Any member desirous of reading a paper before the Society during this year will please send in his title and the time of the year he would like to read his paper.

TREASURER'S REPORT

Actual Book Balance: 11-29-37.....	\$2,842.59
December Credits	\$1,174.36
Total Credits	\$4,016.95
December Expenditures	\$1,273.49
Actual Book Balance 12-31-37.....	\$2,743.46

LIBRARIAN'S REPORT

The Library has loaned to doctors during December, 595 books and journals, with an additional 541 items to students for overnight use, bringing the total for the month to 1,236.

The Library has been increased by 59 volumes during the month, of which 17 were received by gift and 27 from the New Orleans Medical and Surgical Journal, with 15 by purchase. A notation of new titles of recent date is given herewith.

NEW BOOKS—DECEMBER, 1937

Craig, C. F.: Clinical Parasitology, 1937.

Kovacs, Richard: Electrotherapy and Light Therapy, 1937.

Cecil, R. L.: Textbook of Medicine, 1937.

Price, F. W.: Textbook of the Practice of Medicine, 1937.

Maingot, Rodney: Postgraduate Surgery, vol. 3, 1937.

U. S. Surgeon-General's Office: Index Catalog, 4th series, vol. 2, 1937.

American Association for the Study of Goiter Transactions, 1937.

Key, J. A.: Management of Fractures, Dislocations and Sprains, 1937.

Eddy, W. E.: Avitaminosis, 1937.

Wangensteen, O. H.: Therapeutic Problem in Bowel Obstruction, 1937.

Sobotka, Harry: Physiological Chemistry of Bile, 1937.

Association for Research in Nervous and Mental Diseases: Tumors of the Nervous System, 1937.
Bluemel, C. S.: Stammering and Allied Disorders, 1935.

Solomon, Charles: Traffic in Health, 1937.

Young, H. H.: Genital Abnormalities, Hermaphroditism and Related Adrenal Diseases, 1937.

Huhner, Max: Diagnosis and Treatment of Sexual Disorders, 1937.

Buie, L. A.: Practical Proctology, 1937.

Stutterheim, N. A.: Eyestrain and Convergence, 1937.

Brookes, H. S.: Textbook of Surgical Nursing, 1937.

Nocht, Bernard: Malaria, 1937.

Turner, C. E.: Personal Hygiene, 1937.

Braude, Morris: Principles and Practice of Clinical Psychiatry, 1937.

Alexander, John: Collapse Therapy in Pulmonary Tuberculosis, 1937.

Fishbein, Morris: Syphilis, 1937.

International Medical Annual, 1937.

American Red Cross: First Aid Textbook, 1937.

California Medical Association: California Medico-economics Survey, 1937.

National Board of Medical Examiners: Director of Diplomates, 1937.

American Climatological Association Transactions, 1930-36.

Gilbert C. Anderson, M.D.
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The physicians of Louisiana have received advance notice of this important meeting which will be held in New Orleans, March 7-10. This notice is merely a reminder to recall to the members of the State Society the fact that this assembly, attended by approximately seven hun-

dred registrants last year, is one of the outstanding meetings of its kind in the country. This year the program surpasses that of last year, it is promised to those who attend. The speakers include such surgeons as Stone of Baltimore and Hertzler of Halstead; medical men as Strong and Fitz, both of Boston. Well-known specialists in other fields such as Crohn, Wile, Vaughan, and

Mitchell and many others will appear on the program. In addition to the scientific session, many other activities are planned which will add to the enjoyment, as well as the knowledge, of the registrants.

1938 ANNUAL MEETING

CHAIRMEN OF COMMITTEES ON ARRANGEMENT

Dr. C. L. Peacock, General Chairman.
 Dr. C. L. Peacock—Advisory.
 Dr. Edmund Connely—Badges.
 Dr. L. C. Chamberlain—Banquets.
 Dr. Philip Jones—Convention Clinics.
 Dr. H. B. Alsobrook—Commercial Exhibits.
 Dr. J. Kelly Stone—Decorations.
 Dr. Ashton Thomas—Entertainment.
 Dr. George H. Hauser—Finance.
 Dr. P. C. DeVerges—Golf.
 Dr. R. A. Robinson, Jr.—Hotels.
 Dr. E. Z. Browne—Lanterns.
 Dr. Robert Bernhard—Locations.
 Dr. D. C. Browne—Luncheons.
 Dr. W. R. Metz—Publicity.
 Dr. Ambrose Storek—Scientific Exhibits.
 Dr. W. B. Clark—Signs.
 Dr. E. A. Ficklen—Transportation.
 Dr. Lucy S. Hill—Women Physicians.
 Dr. R. L. Gordon—Registration.

Due to the fact that the personnel for these committees was not received until time for the Journal to go to press it will not be possible to publish same in this issue; however these names will be carried in the March issue.

SEVENTH DISTRICT MEDICAL SOCIETY

The Seventh District Medical Society met January thirteenth at the Ardennes Hotel in Jennings. There were present forty-six members and three visitors. A chicken dinner was served before the scientific session opened.

Dr. Neal Owens, of New Orleans, showed lantern slides and spoke on the subject "Some Problems of Reconstructive Surgery of the Face." Dr. Jack E. Strange, also of New Orleans, spoke on "Nutritional Diseases of Infants and Children"; Dr. Jared Y. Garber, of Lake Charles, read a paper entitled "Is Sulfanilamide a Panacea?"

Drs. Owens and Strange were made honorary members of the society. The next meeting will be held in March at Crowley.

L. Z. Kushner, M.D., Sec.

ST. TAMMANY PARISH MEDICAL SOCIETY

The regular annual installation meeting of the St. Tammany Parish Medical Society was held in Covington, January 22, at 8 p. m. The following officers were installed: President: Dr. Frank F. Young; Vice-President: Dr. F. R. Singleton; Sec-

retary-Treasurer: Dr. H. D. Bulloch; Delegate: Dr. Carl Young; Alternate: Dr. H. E. Gautreaux.

Drs. P. T. Talbot, Leon J. Menville, W. H. Harris, A. V. Friedrichs, N. K. Edrington and C. Grenes Cole, all of New Orleans, were guests of the society. Mr. C. D. Sneed and Mr. Nat Goodwyn, both of Covington, represented the press.

Following the meeting, a banquet was held. Much was said in praise of the many good qualities, both professional and personal, of the newly installed president.

H. D. Bulloch M.D., Sec.

WEBSTER PARISH MEDICAL SOCIETY OFFICERS

1938

President: Dr. C. S. Sentell, Minden.
 Vice-President: Dr. C. M. Baker, Minden.
 Secretary-Treasurer: Dr. B. A. Norman, Minden.
 Delegate: Dr. C. M. Baker, Minden.
 Alternate: Dr. R. E. Smith, Minden.

RICHLAND PARISH MEDICAL SOCIETY OFFICERS

1938

President: Dr. Nash Collins, Delhi.
 Secretary-Treasurer: Dr. Lorenz Teer, Delhi.
 Delegate: Dr. C. E. McConnell, Mangham.
 Alternate: Dr. J. C. Sartor, Rayville.

EAST BATON ROUGE PARISH MEDICAL SOCIETY OFFICERS

1938

President: Dr. J. L. Beven, Baton Rouge.
 Vice-President: Dr. D. W. Landess, Port Allen.
 Secretary-Treasurer: Dr. U. S. Hargrove, Baton Rouge.
 Delegates: Drs. C. A. Lorio, W. K. Irwin, J. J. Noto; all of Baton Rouge.

LAFAYETTE PARISH MEDICAL SOCIETY OFFICERS

1938

President: Dr. F. H. Davis, Lafayette.
 Vice-President: Dr. J. J. Burdin, Lafayette.
 Secretary-Treasurer: Dr. William Melancon, Carencro.
 Delegate: Dr. Robert Kapsinow, Lafayette.
 Alternate: Dr. R. S. Hernandez, Duson.

LAFORCHE PARISH MEDICAL SOCIETY OFFICERS

1938

President: Dr. I. J. Boulet, Larose.
 Vice-President: Dr. L. J. Kerne, Thibodaux.
 Secretary-Treasurer: Dr. P. J. Dansereau, Thibodaux.

Delegate: Dr. C. J. Barker, Thibodaux.
 Alternate: Dr. Guy Jones, Lockport.

JACKSON-LINCOLN BI-PARISH
 MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. M. T. Green, Ruston.
 Vice-President: Dr. J. E. Crawford, Ruston.
 Dr. R. U. Parrott, Ansley.
 Secretary-Treasurer: Dr. R. H. Allen, Ruston.
 Delegate: Dr. T. A. Dekle, Jonesboro.
 Alternate: Dr. J. E. Crawford, Ruston.

ASCENSION PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. D. C. Brumfield, Darrow.
 Vice-President: Dr. H. A. Folse, Donaldsonville.
 Secretary-Treasurer: Dr. Myer Epstein, Gonzales.
 Delegate: Dr. D. T. Martin, Donaldsonville.
 Alternate: Dr. H. A. Folse, Donaldsonville.

ST. TAMMANY PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. F. F. Young, Covington.
 Vice-President: Dr. F. R. Singleton, Slidell.
 Secretary-Treasurer: Dr. H. D. Bulloch, Covington.
 Delegate: Dr. Roy Carl Young, Covington.
 Alternate: Dr. H. E. Gautreaux, Covington.

MOREHOUSE PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. W. A. Rodgers, Bastrop.
 Vice-President: Dr. Guy Williams, Mer Rouge.
 Secretary-Treasurer: Dr. F. B. Ogden, Bastrop.
 Delegate: Dr. John N. Jones, Bastrop.
 Alternate: Dr. C. J. Raney, Bastrop.

DESOTO PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. W. B. Hewitt, Mansfield.
 Vice-President: Dr. R. P. Thaxton, Mansfield.
 Secretary-Treasurer: Dr. R. A. Tharp, Mansfield.
 Delegate: Dr. R. A. Tharp, Mansfield.
 Alternate: Dr. W. B. Hewitt, Mansfield.

POINTE COUPEE PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. J. S. Branch, Lettsworth.
 Vice-President: Dr. J. M. Mosely, Lakeland.
 Secretary-Treasurer: Dr. E. G. Durel, New Roads.

Delegate: Dr. R. McG. Carruth, New Roads.
 Alternate: Dr. M. O. Becnel, New Roads.

ACADIA PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. A. B. Cross, Crowley.
 Vice-President: Dr. E. C. Faulk, Rayne.
 Secretary-Treasurer: Dr. R. A. Fontenot, Crowley.
 Delegate: Dr. H. L. Gardiner, Crowley.
 Alternate: Dr. E. C. Faulk, Rayne.

SABINE PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. W. G. Allen, Converse.
 Vice-President: Dr. H. M. Prothro, Pleasant Hill.
 Secretary-Treasurer: Dr. O. L. Sanders, Jr., Converse.

OUACHITA PARISH MEDICAL SOCIETY
 OFFICERS

1938

President: Dr. W. M. Hunter, Monroe.
 Vice-President: Dr. R. M. Simonton, Monroe.
 Secretary-Treasurer: Dr. O. W. Cosby, Monroe.
 Delegates: Dr. G. W. Wright, Monroe.
 Dr. A. L. Peters, Monroe.

ERNEST S. LEWIS MEMORIAL MEETING

Walter W. Chipman, B.A., M.D., LL.D., F.R.C.S. (Edin.), of Montreal, Quebec, will be the guest speaker at the Ernest S. Lewis Memorial meeting of the New Orleans Gynecological and Obstetrical Society with the Orleans Parish Medical Society on March 14. Dr. Chipman is Emeritus Professor of Gynecology and Obstetrics, McGill University Faculty of Medicine, Consulting Obstetrician and Gynecologist Royal Victoria-Montreal Maternity Hospital.

Dr. Chipman has very graciously consented to make the trip especially for this occasion. The medical profession of the South will be interested in hearing him at this time. His subject will be John Hunter, the first scientific surgeon.

The memorial services at this meeting will be for the late Dr. C. Jeff Miller.

AMERICAN COLLEGE OF SURGEONS

Sectional meeting of the American College of Surgeons will be held February 2-4 in Houston with the Rice Hotel as headquarters. Participating states include Texas, Louisiana, Mississippi, Tennessee, Arkansas, Oklahoma, New Mexico, Arizona, Mexico and Cuba. An excellent clinical program has been provided which will embrace of general surgery and surgical specialties, and

also scientific sessions and medical motion picture demonstrations.

NEWS ITEMS

The Southeastern Surgical Congress will hold its ninth annual meeting in Louisville, Kentucky, March 7-9, 1938 at the Brown Hotel. A splendid series of papers will be presented by some of the most distinguished surgeons in the country. Among those included are W. Wayne Babcock, Baltimore, Md.; Willis Campbell, Memphis, Tenn.; George W. Crile, Cleveland, Ohio; Arthur Hertzler, Halstead, Kansas; C. H. Moore, Birmingham, Ala.; and Irvin Abell, Louisville, Ky. On the program from New Orleans are Doctors Isidore Cohn, Alton Ochsner and Ambrose Storck.

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold a first national exhibition in the San Francisco Museum of Art, San Francisco, California, in June, 1938. All entries close April 1, 1938. Any physician interested should communicate at once with the Secretary of the American Physicians' Art Association, Suite 521-536 Flood Bldg., San Francisco, California.

Dr. Willard R. Wirth addressed the Pike County Medical Society at McComb, Mississippi, January 6, 1938 on "Heart Disease in Children." The following day Dr. Wirth spoke to the students of the McComb High School and, later, to the students of the Magnolia High School on "The Causes and Prevention of Heart Disease." On the night of January 7, 1938, Dr. Wirth addressed a parents' and public meeting on the same subject, illustrating the talk with lantern slides.

At the inauguration of Rufus Carrollton Harris as tenth President of The Tulane University of Louisiana, the degree of Doctor of Laws was conferred upon Alphonse Mary Schwitalla, S.J., Dean, School of Medicine, St. Louis University; and Waller Smith Leathers, Dean, School of Medicine, Vanderbilt University.

RESIDENT WANTED

A resident physician is wanted at French Hospital, New Orleans, position to begin immediately.

AMERICAN MEDICAL ASSOCIATION CONVENTION

The convention division of the American Express Company has arranged two all inclusive special train trips to San Francisco. These trips leave Chicago June 6, visit the Indian Detour, Grand Canyon, Los Angeles, Riverside and Santa

Catalina Island. Return trips may be via Portland, Seattle, Victoria, Vancouver and the Canadian Rockies, or Yellowstone, Colorado Springs and Denver. Details of the trip are on file in the office of the Journal.

EXAMINATIONS

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral, clinical and pathological examinations for all candidates (Groups A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13 and 14, 1938, immediately prior to the meeting of the American Medical Association.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh, (6), Pa.

FOUNDATION PRIZE

A copy of the rules governing the award of the Foundation Prize of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons is in the office of the Orleans Parish Medical Society. Briefly, the prize is \$500.00 and is offered to those who are interns, residents, or graduate students in obstetrics, gynecology or abdominal surgery; and physicians (with an M.D. degree) in the above specialties, actively practicing or teaching the same.

MEAD JOHNSON VITAMIN A AWARD

Mead Johnson and Company announce that the Vitamin A Award to be judged in New York on June 4, 1937, was not given to any investigator due to the fact that no clinical investigation on vitamin A had completely answered the objectives of the original proposal. Further consideration of the award is deferred to December 31, 1939. This award is for a large sum which has been segregated and is on deposit in the Continental Illinois National Bank and Trust Company of Chicago.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information. For the week ending December 18, syphilis led all other reported diseases with 82 cases listed. The respiratory tract infections were, as a group, a large number of the reportable cases; there were 57 cases of pneumonia, 54 of influenza and 49 of pulmonary tuberculosis. Other diseases, occurring in numbers greater than ten, were 41 cases of gonorrhea, 32 of cancer, 27 of diphtheria, 19 of malaria, 15 of scarlet fever, 14 of whooping cough and 11 of typhoid fever. Except for Rapides Par-

ish, with four cases, the typhoid fever was scattered through other parishes not to exceed two cases each. In this week, two cases of poliomyelitis were reported. For the fifty-first week of the year, reportable diseases dropped precipitously. There were 53 cases of pulmonary tuberculosis, 50 of influenza, 46 of pneumonia, 34 of cancer, 29 of syphilis and 14 of whooping cough. Two cases of cerebrospinal meningitis were listed from Assumption Parish, and two cases of poliomyelitis, one from Franklin and one from Red River. For the fifty-second and last week of the year, pneumonia showed a sharp increase with 64 cases reported. This was followed by 47 cases of influenza, 46 of cancer, 28 of syphilis, 17 of pulmonary tuberculosis, 15 of scarlet fever and 13 of gonorrhea. There were no cases of poliomyelitis reported this week, and, of the three cases of cerebrospinal meningitis reported from Orleans, one was imported. There were two cases of tularemia reported from Orleans Parish. In the first week of the year, ending January eighth, syphilis led the procession with 55 cases, followed by 45 cases of pneumonia, 42 of influenza, 22 of gonorrhea, 21 each of cancer and chickenpox, 19 of pulmonary tuberculosis, 13 of diphtheria, 11 of malaria and 10 of scarlet fever. This week there was a case of poliomyelitis reported from Catahoula Parish and five cases of cerebrospinal meningitis, two of which had their origin in Assumption, two in Iberville, and one in Richland. For the week ending January 15, there were 167 cases of syphilis listed. Pneumonia increased markedly; pulmonary tuberculosis also took a big jump with 55 cases reported. There then followed 51 cases of influenza, 28 of scarlet fever, 24 of gonorrhea, 23 of cancer, 22 of diphtheria and 21 of septic sore throat, a disease usually not reported or only occasionally. No parish reported more than three cases of scarlet fever except Orleans, which had 13. One case of poliomyelitis was reported from Avoyelles; one case of cerebrospinal meningitis was reported from Orleans; one case each of undulant fever was reported in both Calcasieu and St. Landry.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reports that for the week ending December 18, there were 178 deaths in the city, of which 117 were in the white and 61 negro population. There were, in the same week, 17 deaths in children under one year of age. For the week which ended on Christmas Day, there were fewer deaths in New Orleans. In this week 109 white people died and 68 negro; the infant deaths were only eight in number. For the week which ended the first day of the new year, there were 191 deaths,

divided 119 white and 72 negro. Infant deaths were 21, of which 13 were among negro children. For the week which came to a close January 8, there was quite a fall in the number of deaths, 163, as a result of 15 less in the white and 13 less in the negro population. There were 13 infant deaths.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

ORLEANS PARISH

The Executive Board of the Woman's Auxiliary acted as hostesses at the social hour following the installation of officers of the Orleans Parish Medical Society, when Dr. Shirley Lyons was inducted as president. Refreshments were served and dancing followed. A very large and representative number of doctors and their wives were present.

The Educational Committee headed by Mrs. Hermann B. Gessner reports a fine piece of work in the anti-tuberculosis drive in the public and parochial schools. This committee has distributed pamphlets and posters in the schools. Doctors, appointed by Dr. Lyons, will speak at all parent-teachers' meetings throughout the year.

Mrs. S. M. Blackshear,
Publicity Chairman.

TRI-PARISH

The Woman's Auxiliary to the Tri-Parish Medical Society met on Wednesday night, December 8, in the home of the president, Mrs. E. Otis Edgerton. A very interesting paper, written by Dr. G. W. Gaines, was read by Mrs. Abernathy.

It was voted to send Christmas baskets to poor families in the community. Five dollars was sent to the Indigent Physicians' Fund.

Mrs. T. P. Sparks,
Publicity Chairman.

JEFFERSON DAVIS PARISH

The January meeting of the Jefferson Davis Parish Medical Auxiliary was held in Welsh at the home of Mrs. John G. McClure. After the business meeting, there were informal discussions of Hygeia and the auxiliary and quacks and cults. Several subscriptions to Hygeia were renewed. Delightful refreshments were served by the hostess during the social hour.

Mrs. Claude A. Martin,
Publicity Chairman.

CADDO PARISH

The Woman's Auxiliary to the Shreveport Medical society met Wednesday afternoon in the home of Mrs. A. A. Herold. After a short business session, Mrs. Peachy Gilmer introduced Mrs. Robert Simmons who has recently moved to Shreveport with Dr. Simmons to make her home. Mrs. Simmons delighted the members with her presentation of medical current events. Mrs. Harold Quinn followed with a paper on "Highlights of Medicine in 1937." Mrs. Quinn's paper, which was carefully prepared and condensed, brought out much that was important and interesting to laymen in the various branches of medicine. During the coffee hour which followed, Mrs. J. T. Crebbin and Mrs. C. E. Rew poured coffee from a beautifully appointed table, assisted in the dining room by the hostesses of the afternoon.

Mrs. J. T. Scales,
Publicity Chairman.

Following are the names of the officers and chairmen of the Woman's Auxiliary to the Southern Medical Association:

OFFICERS

President: Mrs. Luther Bach, 325 Taylor Ave., Bellevue, Ky.

President-Elect: Mrs. W. K. West, 223 N. W. 23rd., Oklahoma City, Okla.

First Vice-President: Mrs. T. R. W. Wilson, Pointsett Hotel, Greenville, S. C.

Second Vice-President: Mrs. E. W. Veal, No. 25 Miami Road, S. Jacksonville, Fla.

Recording Secretary: Mrs. Estes H. Hargis, 1231 32nd. St., N. Birmingham, Ala.

Corresponding Secretary: Miss Alma Jean Bach, No. 325 Taylor Ave., Bellevue, Ky.

Treasurer: Mrs. George J. Taquino, No. 18 Fontainbleau Drive, New Orleans, La.

Historian: Mrs. J. W. Warren, No. 407 Audubon Blvd., New Orleans, La.

Parliamentarian: Mrs. M. Pinson Neal, No. 1309 Bouchelle Ave., Columbia, Mo.

COMMITTEES

Memorial: Mrs. Olin C. Coffey, 948 Lullwater Road, N. W., Atlanta, Ga.

Research: Mrs. S. A. Cullom, Sr., 621 Main St., Texarkana, Tex., assisted by Mrs. A. A. Herold, Shreveport, La.

Jane Todd Crawford: Mrs. C. B. Erickson, 423 Herndon Ave., Shreveport, La.

Resolutions: Mrs. Jules Myron Davidson, No. 10 Trianon Plaza, New Orleans, La.

Budget: Mrs. Charles Corn, No. 11 Crescent Ave., Greenville, S. C.

Custodian of Records: Mrs. Stephen C. McCoy, Preston St. Road, Louisville, Ky.

Re-appointed Council Members:

Alabama: Mrs. L. W. Roe, Mobile.

Arkansas: Mrs. S. A. Cullom, Jr., Texarkana.

District of Columbia: Mrs. A. Barnes Hooe, Washington.

Florida: Mrs. E. W. Veal, Jacksonville.

Georgia: Mrs. L. W. Williams, Savannah.

Advisory Committee:

Dr. J. W. Jervey, Greenville, S. C.

Dr. W. K. West, Oklahoma City, Okla.

Mr. C. P. Loran, Birmingham, Ala.

The president reports the organization of another new auxiliary; i. e., in Rapides Parish. This brings the total of new auxiliaries since April up to eight. Next month, we expect to report another one.

Do not forget the A. M. A. Health Broadcast each week; do not forget I want to hear from you each month with news of your parish auxiliary.

Mrs. L. W. Alexander, Chairman.
Press and Publicity.

BOOK REVIEWS

Clinical Endocrinology: By Samuel A. Loewenberg, M. D., F. A. C. P., with a Foreword by Hobart A. Reimann, M. D. Philadelphia, F. A. Davis Company, 1937. pp. 825. Price \$8.00.

Loewenberg has divided his subject matter into thirteen chapters, the last of which discusses the laboratory work. This the reviewer has only glanced through rather superficially but at least with sufficient attention to note that it contains

more detail than is usually incorporated in equivalent sections in other books.

The remainder of the book contains the usual discussion of the embryology, the anatomy, the hormones, identified or theoretical, and the clinical application of such endocrine products as are available or supposedly useful at the present time. The estimates of therapeutic values are conservative and in many, or perhaps most, instances

based on the clinical experience of the writer. One good feature of each chapter is a reasonably compendious bibliography which is a welcome addition, especially as personal reference to some of them has shown them to be correct.

The chapters devoted to the internal secretions of the pancreas and of the thyroid are unusually attractive in that the detail is thoroughly evaluated, and the therapeutic measures are eminently complete and practical.

Obesity, which is a burning problem both in theory and fact, particularly where the female sex is concerned, receives attention without affording the reader much satisfaction or a great amount of enlightenment. The classification of obesities into types is novel and it helps one to know that the outstanding objective symptom upon which both the eye of the patient and the eye of the doctor is so often focused may have a manifold etiology.

There are some excusable errors, for the most part typographical, which inevitably creep into the first edition of all books. However, it is difficult to understand why the statement on page 326 should have slipped in regarding the cholesterol content of the blood in endemic cretinism. This is said to be "high and may reach to 6 mgm. or over to the 100 c.c. of blood." Unless the abbreviation "mgm." means something other than milligrams, the figure is exceedingly small, the amount being normally 140-170 mg. (Gradwohl) or 140-190 mg. per 100 c.c. (Laboratory Methods of the United States Army).

The diction is excellent, the press work equally good, and the text makes for clarity and easy reading. Altogether the book is a work highly commendatory of the author's learning and experience.

L. C. SCOTT, M. D.

Manual of Human Dissection: By Edwin M. Shearer, Ph. D. Philadelphia, P. Blakiston's Son & Co., Inc., 1937. pp. ix + 321; figs. 79. Price \$4.25.

Designed for the medical student, this work aims only to outline the procedures of dissection and to aid the identification of structures as they are exposed. Its purpose, as a supplement to a textbook of anatomy, is to indicate to the beginner the features which he can reasonably be expected to disclose in his own dissections and to obviate the misdirection of time and effort which results from the lack of definite technical guidance in the laboratory. The directions for dissection, as well as the descriptive matter, are brief and to the point. The figures, reproduced from the author's own drawings, are notable not only for their simplicity and accuracy but especially in that they illustrate dissections carried out ex-

actly as the student is directed to make them. The format of the manual is in keeping with its intended use; the type face is large and the binding is sturdy, the cloth cover being water resisting and washable.

HAROLD CUMMINS, Ph. D.

International Clinics: Vol. III, September, 1937. Philadelphia, J. B. Lippincott, 1937. pp. 328. Price \$2.50.

This volume contains medical clinics at the Johns Hopkins Hospital in addition to excellent articles dealing with several aspects of tuberculosis and syphilis. Essays pertaining to diseases of the heart, lungs, circulation and the endocrines are both interesting and important in their timeliness, with references to present day problems in medicine. To the members of the local profession: There is an article entitled, "Diabetics—What of the Future," by the late Dr. I. I. Lemmann.

I. L. ROBBINS, M. D.

Russian Medicine: By W. Horsley Gantt, M. D. New York, Paul B. Hoeber, 1937. pp. 214 with 12 illus. Price \$2.50.

This little volume is one of a series of handbooks of medical history published under the general title of *Clio Medica*. The author's interest in Russia began while a member of the American Relief Administration in 1922-23 and developed during the five years he was working with Professor Pavlov (1924-29).

He divided Russian medicine into four periods: The first began at the time of Peter the Great and the last epoch is that of Soviet Medicine. The history of Russian medicine runs parallel with the story of Russia itself. The development of the country came centuries later than that of the central and western European nations.

"The last chapter entitled "Soviet Medicine" will prove the most interesting to the casual reader. Here we learn of the several Soviet achievements since the new regime. The author states, "In thus replacing the private by the governmental doctor and providing free treatment for the employees, the state, in spite of remarkable progress, has attempted a larger task than it has been able at present to solve adequately. Doctors and medical personnel are tired, overworked and often indifferent: The system is slow and cumbersome, so that the patient is frequently "well or dead" before his turn comes for the sanatorium."

He mentioned that notwithstanding bungling and red tape, the Soviet government has made tremendous advances in public health work. Science in Soviet Russia at present tends to be spectacular, suggestive, brilliant, often very in-

genious, but frequently wanting in the matter of careful controls, self-restraint and criticism.

This is an interesting summary of the history of Russian medicine. For those interested in the achievements of Soviet medicine, this volume is recommended.

WARREN HEBERT, M. D.

Practical Proctology: By Louis A. Buie, A.B., M.D., F.A.C.S. Philadelphia, W. B. Saunders, 1937. pp. 512. Price \$6.50.

Rarely does it become necessary to resort to superlatives but in this case it is considered wise. This complete and accurate textbook is worthy of praise. Dr. Buie has had considerable experience in this particular field and is regarded by many as "the official source," when questions concerning proctologic disorders arise.

The contents of this volume include the diagnosis and treatment of diseases of the rectum and anus. The technic of proctosigmoidoscopy is thoroughly discussed as well as pre- and post-operative care.

Throughout the volume we enjoy the rather "individual remarks" which so characterize this author. The book is not difficult to read for it is written in a simple, direct, though very eloquent, style.

It should be recommended for students, general practitioners and proctologists.

WARREN HEBERT, M. D.

Primer for Diabetic Patients: By Russell M. Wilder, M. D., Ph. D., F. A. C. P. Philadelphia, W. B. Saunders Co., 1937. pp. 191. Price \$1.75.

In writing this edition of his excellent manual for diabetics, Dr. Wilder has again employed the simple, direct manner of presentation which is so highly appreciated by patients struggling to understand something of their disease and the method of its care. A section on protamine insulin appears which is surprising in the information it imparts in a relatively small space. Paul Tarara's contribution, "The Hygiene of the Feet," is extremely important.

MANUEL GARDBERG, M. D.

A Diabetic Manual: By Elliott P. Joslin, M. D. Philadelphia, Lea & Febiger, 1937. pp. 219. Price \$2.00.

Joslin brings up to date one of the stand-bys of the medical profession more completely illustrated than before.

MANUEL GARDBERG, M. D.

A Brief Outline of Modern Treatment of Fractures: By H. Waldo Spiers, A. B., M. D. 2nd ed. Baltimore, William Wood & Co., 1937. pp. 137. Price \$2.00.

The first edition of this small volume appeared

in 1935. The objective of this book is a very noteworthy one and a very good one; that is, it attempts to present briefly an introductory view of the subject of fractures and dislocations in sufficiently short time to permit the student to cover the subject in the limited period which even an industrious student may justifiably devote to the subject during the busy surgical course. For this latter purpose, the volume will have its most rational use. There are one hundred and thirty-seven pages with approximately one hundred and eleven illustrations. Fractures of the skull are not considered nor are head injuries. Fractures of the face are limited to the discussion of fractures of the mandible. The volume may be recommended as a very brief review for those who have a short time in which to cover the subject.

HOWARD R. MAHORN, M. D.

Management of Fractures, Dislocations and Sprains: By John Albert Key, B. S., M. D., and H. Earle Conwell, M. D., F. A. C. S. 2nd. ed. St. Louis, C. V. Mosby Co., 1937. pp. 1246. Price \$12.50.

This is a second edition of a work which made its initial appearance three years ago. In its twelve hundred and forty-six pages and twelve hundred and twenty-two illustrations, it presents, in massive form, the subject of fractures and dislocations. Every phase of the subject is covered in great detail with an introductory discussion of the anatomy at the beginning of each chapter; then the consideration of the mechanism of production, the diagnosis, prognosis, complications and details of treatment. Wherever there is any discrepancy in the preference of the two authors for a certain type of treatment, it is indicated. The chapters on injuries of the bones of the face by J. Barrett Brown and on head injuries by Dowman, revised by Edgar Fincher, are excellent. This appears to be the most comprehensive book dealing with traumatic injuries of the skeleton, and, for that reason, should be recommended without reservation to the student and practitioner as a reference which will answer well any question which may come up regarding this subject. The illustrations are excellent and are adequate in number and selection. The very characteristic which makes this book so worthy of note is also one of its weaknesses; that is, because it is so complete, it is extremely long and it is difficult for students to cover and retain a reasonable amount of the mass of information presented in the limited time which they can justly apportion to this subject in a busy surgical course.

HOWARD R. MAHORN, M. D.

The Postmortem Examination: By Sidney Farber, M. D. Baltimore and Springfield, Charles C. Thomas, 1937. pp. 201, Price \$3.50.

The need for a book in English on autopsy technic has always been felt. Dr. Farber has given a clear and orderly method which will be especially valuable to medical students, young pathologists and clinical house officers. His historical introduction showing the gradual development of the various autopsy technics used is most illuminating.

JOSEPH ZISKIND, M. D.

Genital Abnormalities, Hermaphroditism, and Related Adrenal Diseases: By Hugh H. Young, M.A., M.D., Sc.D., F.R.C.S.I., D.S.M. Baltimore, William Wood, 1937. pp. 649. Price \$10.00.

This book represents the culmination of Dr. Young's lifetime experience in handling cases presenting various abnormalities of the genitalia. It should be noted that Dr. Young's position and reputation probably have made it possible for him to see and treat more such cases than any other one man, thus explaining why so many rare natural phenomena are grouped together in this one work.

In those cases consisting of an unbalanced sexual development in one way or another, it will be seen that each case is a law unto itself, for not only do the configurations of the genitalia differ, but the mental reactions to the situation by the patient, as well. Some of these individuals, for their own reasons, wish to remain status quo. The remainder wish to be molded into one definite sex, usually the one to which their inclinations lean. However, even this is not always true, as in the somewhat amusing instance of one individual, passing as both male and female among different groups of friends, but who was definitely male in temperament. This person refused to be constructed into a complete male, however, because he was married to a man at the time, who he said was his "meal ticket," and he did not wish to lose this support and be forced to go to work. Such are the mental reactions of these patients, no two alike.

Dr. Young reports one personal case of true hermaphroditism, and includes case reports of each of the other eight verified cases in the literature. We are also furnished an excellent and entertaining historical review of hermaphroditism down through the ages, with illustrations and quotations depicting the position in society of these unfortunates in the various eras of civilization.

Also included are chapters on other abnormalities, some common and others quite rare. These include hypospadias, epispadias, exstrophy of the bladder, cryptorchidism, and others less common.

The work is profusely illustrated both with photographs and with drawings. The drawings are used both to demonstrate the exact anatomy of these abnormalities and to illustrate the various steps in operative procedures for their correction. The description of the various operative procedures employed in the correction of each condition constitutes a considerable portion of the text. It must be remembered however that in each instance the method used represents that which was either suggested or preferred by Dr. Young himself, and does not include the other established procedures. In that respect, therefore, we are shown only the opinions and prejudices of one man.

All in all, however, one is safe in regarding this work as perhaps the most complete presentation of its subject that has yet been given to the literature. It should prove of greatest value to everyone faced with the care of any such unfortunate individual, the victim of a gross genital abnormality.

W. E. KITTREDGE, M.D.

The Normal Encephalogram: By Leo M. Davidoff, M.D., and Cornelius G. Dyke, M.D. Philadelphia, Lea & Febiger, 1937. pp. 224, illus. Price \$5.50.

This volume fills a long felt need as a reference book for neurologists, neurological surgeons, internists and roentgenologists. It can be best described as a comprehensive encephalographic study of the normal living brain, its chambers, convolutions and coverings.

The knowledge contained in this book is the result of the authors' personal experience with 4,000 encephalographic examinations, and a complete review of the literature. Its use will materially assist in interpreting the contrasting shadows of gas, fluid and tissue, as seen in the encephalogram, in terms of brain anatomy.

Under general considerations the authors discuss the apparatus used, their technic of encephalography, the relative merits of ventriculography and encephalography, the quantity of gas used and its absorption; the indications for, the contraindications against and the reactions incident to the procedure. The roentgen technic is given together with the positions used and the physical factors advised.

Other valuable chapters describe and illustrate the visualization of the ventricles, the cerebral convolutions and sulci, the subarachnoid cisterns and their contents; and the intracranial structures and their related fluid spaces.

The roentgenograms are excellent and were apparently carefully selected for they illustrate the text with remarkable clarity; particularly are the encephalograms visualizing the cerebral convolu-

tions and sulci valuable for very little previous work has been done on this subject.

Many of the anatomical illustrations are taken from Key and Retzius', "Neurological Anatomy."

The bibliography covers ten pages and will be of much assistance to one wishing to do collateral reading on the subject.

R. W. COOPER, M.D.

Practical Talks on Kidney Disease: By Edward Weiss, M.D., Baltimore, Charles C. Thomas, 1937. Pp. 176. Price \$3.00.

This book is "a concise survey" emphasizing the practical aspects of the subject. The author starts with a resume of modern theories of normal renal function and follows with the pathologico-physiologic explanation of the signs and symptoms of renal disease. Only the so-called "medical diseases of the kidney" are discussed, that is, the various stages of glomerular nephritis, the nephroses, nephrosclerosis and renal disease associated with pregnancy. Essential hypertension and its relationship to renal disease is also briefly considered.

Weiss has presented topics which, in his own experience, he has found to be confused and uncertain in the minds of students and practitioners. The presentation of some of the topics is so limited that many of them perhaps might well have been omitted. Yet on the whole, and in spite of the simple, short discussions in many instances, the author has presented a readable, practical summary of most of the topics considered.

The book would be of value to the student or practitioner wishing a brief reorientation concerning the modern concepts of medical renal disease. It is in no sense a complete or full presentation of the subject and is valueless as a reference book, but this reviewer feels the few hours needed to read the book were well spent.

GEORGE F. ELLINGER, M.D.

PUBLICATIONS RECEIVED

D. Appleton-Century Company, New York City: *Milestones in Medicine: Laity Lectures of the New York Academy of Medicine*, with an introduction by James Alexander Miller, M.D., President, New York Academy of Medicine.

Paul B. Hoeber, Inc., New York City: *Fever Therapy, Abstracts and Discussions of Papers Presented at the First International Conference on Fever Therapy*, edited by Members of the American Committee, Dr. Walter M. Simpson, Chairman.

Lea & Febiger, Philadelphia: *Theoretical Principles of Roentgen Therapy*, edited by Ernst A. Pohle, M.D., Ph.D., F.A.C.R.

J. B. Lippincott Company, New York City: *The Physician's Business*, by George D. Wolf, M.D.

Liveright Publishing Corporation, New York City: *The Story of Motherhood*, by Roy P. Finney, M.D. *The Romance of Russian Medicine*, by Michael L. Ravitch, M.D.

C. V. Mosby Company, St. Louis: *Macleod's Physiology in Modern Medicine*, edited by Philip Bard. *Operative Gynecology*, by Harry Sturgeon Crossen, M.D., and Robert James Crossen, M.D.

W. W. Norton and Company, New York City: *Socialized Medicine in the Soviet Union*, by Henry E. Sigerist, M.D.

W. B. Saunders Company, Philadelphia and London: *Essentials of Prescription Writing*, by Cary Eggleston, M.D., sixth edition revised. *Surgical Diseases of the Mouth and Jaw*, by Earl Calvin Padgett, B.S., M.D., F.A.C.S.

William Wood and Company, Baltimore: *Demonstrations of Physical Signs in Clinical Surgery*, by Hamilton Bailey, F.R.S.C. (Eng.). *Wheeler and Jack's Handbook of Medicine*, revised by John Henderson, M.D., F.R.F.P.S. (Glas.). *Synopsis of Obstetrics and Gynaecology*, by Aleck W. Bourne, M.A., M.B., B.Ch. (Camb.), F.R.C.S. (Eng.), F.C.O.G. *Modern Dietary Treatment*, by Margery Abrahams, M.A. (Oxon.), M.Sc. (Columbia Univ.), and Elsie M. Widdowson, B.Sc., Ph.D. (Lond.). *Practical Methods in Biochemistry*, by Frederick C. Koch. *Medico-legal Aspects of the Ruxton Case*, by John Glaister, M.D., D.Sc., Barrister-at-law, and James Couper Brash, M.A., M.D., F.R.C.S. *A Method of Anatomy*, by J. C. Boileau Grant, M.C., M.B., Ch.B., F.R.C.S. (Edin.). *Organization, Strategy and Tactics of the Army Medical Services in War*, by T. B. Nicholls, M.B., Ch.B. *Vade Mecum of Medical Treatment*, by W. Gordon Sears, M.D. (Lond.), M.R.C.P. (Lond.). *Medicine for Nurses*, by W. Gordon Sears, M.D. (Lond.), M.R.C.P. (Lond.). *Textbook of Experimental Surgery*, by J. Markowitz, M.B. (Tor.), Ph.D., M.S. in Exp. Surg. (Minn.). *A Practice of Orthopaedic Surgery* by T. P. McMurray, M.B., M.Ch., F.R.C.S. (Edin.). *Pulmonary Tuberculosis in Practice*, by R. C. Wingfield, B.A., M.B., B.Ch., F.R.C.P. *Fractures and Dislocations for Practitioners*, by Edwin O. Geckeler, M.D. *Lectures on the Epidemiology and Control of Syphilis, Tuberculosis and Whooping Cough, and Other Aspects of Infectious Disease*, by Thorvald Madsen, M.D.

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CORONARY DISEASE

A SYMPOSIUM*

THE BLOOD SUPPLY OF THE HEART WALL

B. I. BURNS, M. D.,†

and

G. N. RONSTROM, M. D.†

NEW ORLEANS

Although the distribution of blood vessels to the heart wall has been studied by numerous investigators since the time of Vesalius and Fallopius, many details have been understood only comparatively recently and some are disputed still. A recitation of the general distribution of the coronary vessels is not within the scope of this paper and is not justified since such facts may be had by reference to any standard textbook of anatomy. The discussion will, therefore, be limited to a consideration of a few of the less well-known features. No review of the literature will be attempted but a few important references are appended for the convenience of the interested reader.

DISTRIBUTION OF CORONARY ARTERIES TO VENTRICLES

In general the right coronary artery is distributed to the wall of the right ventricle and the left to the wall of the left ventricle. However, in order to complete the picture the following additional statements must be made: (1) A narrow longitudinal area in the posterior wall of the left ventricle approximately one-sixth the width of the wall is supplied by both the right and left coronary; (2) to the right of this area the posterior wall of the left ven-

tricle is supplied by the right coronary; (3) approximately the middle longitudinal third of the interventricular septum is supplied by both coronaries, the posterior portion of the septum being supplied by the right and the anterior by the left coronary; (4) a narrow portion in the medial part of the anterior wall of the right ventricle receives a supply from both coronaries.

DISTRIBUTION OF CORONARY ARTERIES TO THE ATRIA*

The atrial branches are less constant than those of the ventricles. Two branches from the right circumflex supply the right atrium. One of these supplies the anterior wall, the appendage, the interatrial septum and the posterior wall of this chamber. It passes through the septum to reach the posterior wall and at its termination forms a ring about the opening of the superior vena cava and sends arborizations to the atrioventricular node. This artery anastomoses freely with other atrial arteries. It may arise from the left coronary. A second branch from the right circumflex courses upward on the aortic surface of the right auricular appendage and supplies the superior aspect of the wall. A lateral branch may be given off from the right coronary near the right border to supply the right surface and terminate near the inferior vena caval opening. One or two small atrial branches from the left coronary and numerous inconstant twigs from both coronaries complete the arterial distribution but are subject to so much irregularity that special consideration of them is impractical for present purposes.

*Read before the Orleans Parish Medical Society, May 10, 1937.

†From the Department of Anatomy, Louisiana State University Medical Center, New Orleans.

*In the use of the term "atrium" to designate the receiving chamber of the heart the authors conform to BNA nomenclature. The term "auricle" or "auricular appendage" is reserved for the blind upward extension of the chamber.

Numerous small arterial twigs from each coronary system ramify and anastomose freely in the adipose tissue of the epicardium.

VEINS OF THE HEART WALL

The coronary veins and their branches tend to follow the arteries. However, since they are, in general, tributary to the coronary sinus, the course of the larger branches departs from that of the arteries near their origin to reach the posterior coronary sulcus. Special mention may be made of the thebesian veins. These minute channels empty directly into the heart chambers. They have been the subject of considerable discussion but it is now generally recognized that they exist in large numbers in the right auricle, especially in the interatrial septum, are less numerous in the left atrium and also exist in the ventricular walls. In the latter they are most numerous in the region of the conus of the right ventricle, in the region of the bases of the papillary muscles, and in the musculature of the apex. They are of two types: (1) with small openings 1-2 mm. in diameter

which drain capillaries into the chambers, and (2) larger channels which drain veins of the musculature into the chambers. In the ventricles the thebesian veins probably drain chiefly the subendocardial area and communicate with the larger veins only through capillaries. The abundance of venous channels is striking, as indicated by the cast (fig. 1).

COLLATERAL CIRCULATION OF HEART WALL

The existence of anastomoses between the coronary arteries has been a subject of long discussion and investigation because of its bearing on the subject of infarction. Even though questioned during comparatively recent times, the fact that such anastomoses do exist is now well established and is demonstrable in the casts featured (figs. 2-4). However, while no one who has followed the work on the subject ques-



Fig. 1. Celloidin-rubber cast of the coronary veins in the wall of the human heart. Note the greater number of veins in comparison to the arteries in the heart wall; the many venous anastomoses; that only a few veins to the atria have been injected, possibly due to the fact the cannula was passed into the coronary sinus beyond the entrance of the veins draining the atria.



Fig. 2. Celloidin-rubber cast of the coronary arteries in the human showing the diaphragmatic surface of the heart. The left border of the heart is at the observer's left. Note the posterior descending branch of the right coronary as it courses to the apex and divides, in this cast, into two large branches; the interventricular septum is the dark area in the midregion extending roughly parallel to the left border of the heart; the presence of numerous anastomoses.

tions the presence of anastomoses, there seems to be a general lack of appreciation among clinicians of the abundance of collateral channels in the coronary circulation. An examination

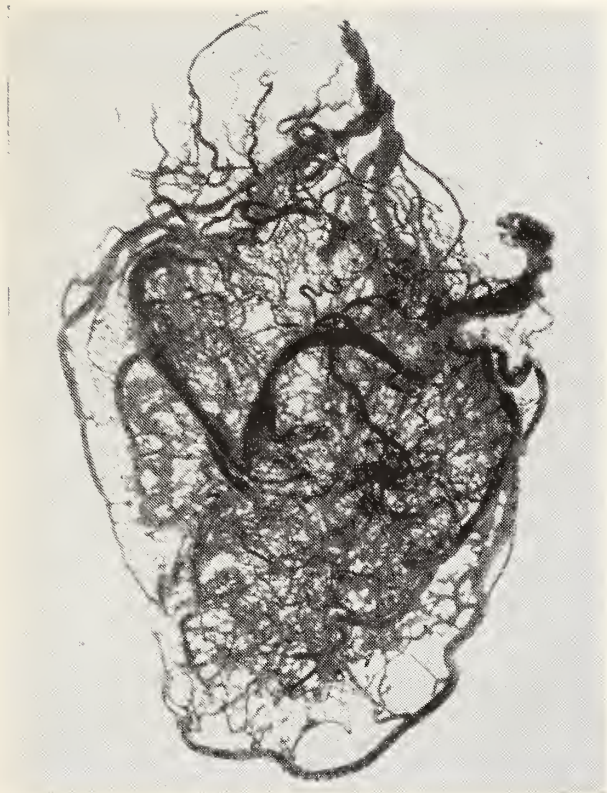


Fig. 3. Celloidin-rubber cast of the coronary arteries in the human showing the right blunt border. The anterior surface of the heart is toward the observer's right. Note the circumflex segment of the right coronary; the septum viewed broadside which is the darker area filling most of the heart; the abundant anastomoses.

of casts such as those featured here confirms the findings of numerous investigators (Gross) that abundant anastomoses exist not only in the form of capillaries but by means of comparatively large arteries and veins connecting branches of the right and left coronary systems and connecting the right and left systems themselves. Even a cursory study of such preparations makes it very evident that the explanation of the pathology of coronary occlusion is not to be found in end arteries.

Extracardiac anastomoses of the coronary arteries have been demonstrated by Hudson, Moritz, and Wearn by injecting India ink into the coronary arteries. By this procedure they found connections with: (1) vasa vasorum of the aorta as far distally as the level of the diaphragm; (2) vasa vasorum of the pulmonary artery from its origin to well within the lung substance; (3) vessels in the pericardium; (4) vessels in the diaphragm arranged in a fan-like manner over each dome as well as on the

abdominal surface; (5) vessels over the pleural surfaces of the lungs and along the bronchi as far as the second bifurcations; (6) vessels in the mediastinum, trachea, and esophagus.

Communications between vessels of the heart wall and the heart chambers consist of: (1) arterioluminal vessels (Wearn), small arterioles connecting the coronary arteries directly with the chambers; (2) arteriosinusoidal vessels (Wearn, Mettier, Klumpp, and Zschiesche), consisting of branches of small arteries which terminate by arborization into sinusoids of 50 to 250 micra in diameter instead of into capillaries. At their distal ends these sinusoids open into the heart chambers.

BLOOD SUPPLY OF HEART VALVES

The blood supply of heart valves has been considered of some importance in relation to valvular endocarditis. Wearn and Gross discuss this subject and agree that blood vessels do occur in normal valve cusps. The former



Fig. 4. Celloidin-rubber cast of the coronary arteries in the human. The left border of the heart is at the reader's right. Note the abundant vascular supply to the ventricles and the relatively sparse distribution to the auricles; the large anterior descending ramus of the left coronary coursing to the apex; the dark area in the midregion between the right and left ventricles which is the interventricular septum; the profusion of anastomoses over the surface of the ventricles.

demonstrated them in 168 of 255 normal human hearts while the latter seems to feel that they are present in fetal hearts but regress as age advances. Other workers believe they exist only in inflammatory conditions or that they are present only in a small percentage of normal hearts, if at all.

BLOOD SUPPLY OF NEUROMUSCULAR TISSUE

Gross, on the basis of a study of 100 hearts, states that he is "of the opinion that a distinct and specific blood supply exists for both sinoatrial and atrioventricular nodes, the main bundle, the first portion of the left limb and a large part of the right limb of the neuromuscular system. The remainder shows a supply which corresponds to the area of heart musculature on which it rests." The sinoatrial node is supplied by a fairly large branch which arises from the right coronary artery near its origin. The atrioventricular node is supplied by a slender twig from the branch of the posterior descending division of the right coronary which supplies the fibrous septum. The right limb of the neuromuscular bundle is supplied by a comparatively large branch of the anterior descending left coronary division. The left limb of the bundle has no specific vessels but is supplied on its septal aspect by numerous branches from anastomoses of the two coronary arteries; the remainder of this limb is supplied by variable branches of vessels in the heart musculature. There is marked variation and profuse anastomosis of the above arteries. A more detailed study of a large number of hearts will be necessary before definite statements can be made regarding the blood supply of the neuromuscular tissue if definite clinical use is to be made of it.

SUMMARY

The features of the anatomy of the coronary circulation which should be emphasized are: (1) The abundance of vessels (arteries, veins, sinusoids, and capillaries) is probably much greater in proportion to total volume of heart wall than is commonly supposed; (2) communications between the heart chambers and arteries in the heart wall do exist; (3) anastomoses between the right and left coronary arteries are exceedingly numerous both in the form of arterioles and capillaries.

While the vessels to the ventricular walls are fairly well-known and reasonably constant, those to the atrial walls are less well-known and subject to marked variation.

Valve cusps probably have a blood supply in a considerable majority of human hearts but authorities do not agree as to their presence in the adult heart.

Definite arteries to the neuromuscular tissue are described but a considerable portion of this tissue is supplied by numerous small and inconstant branches. A free anastomosis between the branches seems to be agreed upon.

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PHYSIOLOGY OF THE CORONARY CIRCULATION

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The problem of the coronary circulation is almost exclusively a problem of the oxygen supply to the myocardium. In the absence of other disease, such as diabetes, the removal of metabolic waste materials and the supply of foodstuffs by the blood stream is of quite subsidiary importance. Infarction is a result of the cutting off of oxygen and the changes which occur in the muscle in chronic coronary insufficiency are the direct or secondary effects of an inadequate oxygen supply.

It is for this reason that the coronary circulation cannot be approached intelligently unless something is known of the factors which increase or decrease the oxygen utilization of heart muscle. The oxygen consumption of the muscle will be a measure of oxygen requirement. Coronary disease acquires clinical significance only when, under conditions of stress, the supply of oxygen is insufficient to meet the demand or requirement.

In the normal heart, it is sufficiently correct to say that oxygen requirement will be proportional to the work done. But this is not true in the dilating and failing heart. As the amply confirmed experiments of Starling and Visscher demonstrated, the oxygen requirement of heart muscle is proportional, within fairly wide limits, not to work done, but to the diastolic volume of the ventricles. Thus the failing and dilated heart, though doing even less work than a normal heart, will demand a very significantly greater amount of oxygen than the normal heart. Its efficiency is greatly diminished.

In addition to diastolic volume, an increase in the per minute heart rate will increase the demand for oxygen. But this is only true provided a decrease in diastolic volume associated with the increased rate does not offset the effect of the acceleration. In the failing heart a significantly decreased volume is unlikely to occur. Thus, both dilatation and the usual cardiac acceleration contribute to the increased need for oxygen in failure.

It is precisely at this time when the need is greatest that diseased coronary arteries are unable to meet the demand. Their rigid or semi-rigid walls and narrowed lumina will not permit the passage of enough oxygenated blood. In consequence, the myocardium becomes yet more enfeebled; there is yet more dilatation associated, as a rule, with further augmentation in rate. And thus the demand, which could not be met before, is raised still further. A vicious circle, manifesting itself as acute congestive failure, has been precipitated. The precipitating agent may have been undue exertion or the raised metabolism engendered by the hyperpyrexia in an acute infection.

The operation of those mechanisms which normally adjust the blood and oxygen supply of the heart to its requirements are less important in the presence of coronary disease than in the normal heart. For the diseased artery is one which, because of the rigidity of its wall and the narrowness of its lumen, is unable to respond to the influences which cause the normal artery to dilate or constrict. From the standpoint of coronary disease, the important factor is one which has a minor or negligible role in the normal heart. This is the production or development of a collateral circulation,

whether by way of arterial anastomoses or by way of the thebesian veins or other vessels connecting the ventricular cavities with the muscle. That these alternative pathways are important in coronary occlusion is proved by the observations of Wearn and others that at autopsy both coronaries may sometimes be completely occluded, yet there is no infarction of the myocardium.

VOLUME OF CORONARY FLOW

In the normal heart, the volume of the coronary flow is about 210 c.c. per minute, or about five or six per cent of the total output of the left ventricle. Under various physiological conditions this volume will vary greatly. The factors responsible for the variations are the aortic blood pressure, the nerve supply, the accumulation of metabolites, and the heart rate. Under special conditions, the strength of systole, the diastolic volume of the ventricles, the diastolic pressure within the right auricle, and the action of drugs may be of importance.

There is no disagreement among students with respect to the importance of aortic pressure. The higher the aortic pressure, the greater the flow through the coronary arteries. This is well shown in the experiments of Markwalder and Starling and of Dusser de Barenne.

In some of the experiments, the coronary flow actually exceeded the systemic flow, when mean pressures were exceedingly high. However, these experiments do not mean that in human hypertension a similar augmentation will occur. In the experiments, the systemic, but not the coronary resistance was raised. If, in hypertension, the coronary resistance is raised as much as the systemic, no greater percentage of the blood than in the normal heart will be diverted into the coronary arteries. If, however, the coronary resistance is increased less than the systemic, there will be a relative increase in coronary flow. The distinction between so-called benign and malignant hypertension may perhaps be found to depend upon the relative condition of the coronary circulation.

INFLUENCE OF SYSTOLIC AND DIASTOLIC PRESSURE

With respect to the question as to whether systolic or diastolic pressure has the greater influence on coronary flow, there is less agreement. Most investigators (Evans, Anrep,

Starling) appear to regard the mean pressure, and not systolic or diastolic as the important one. F. M. Smith regarded diastolic pressure as the more important. Wiggers, position seems to be sounder, namely that systolic pressure and its fluctuations largely determine systolic flow, and diastolic pressure and its fluctuations determine diastolic flow. For practical purposes this amounts to the prevailing view.

In regard to the distribution of flow during systole and diastole there is considerable diversity of opinion. Anrep and his colleagues believed that there was practically a complete cessation of inflow into the coronaries during the latter two thirds of systole, so that the greater part of the inflow occurred during diastole. Wiggers and his colleagues (Cotton, Green, Gregg) are at the other extreme and regard volume inflow during systole as substantially equal to the flow during diastole. The chief reason why diastolic flow, at ordinary heart rates exceeds systolic is because diastole lasts longer. A careful consideration of the methods employed and of the results will probably convince the unbiased observer that the truth here lies between the extremes so far as total coronary flow, both right and left, is concerned. Wiggers has proved that when the aortic pressure, under experimental conditions, exceeds the force of the muscular contraction, the flow, although slowed up, does not cease. The contraction of the right ventricle is feeble in comparison with that of the left. Thus the rise in aortic pressure during systole will offset the tendency to reduction in right coronary flow brought about by muscle contraction. In the left ventricle, on the other hand, particularly in the deeper muscle layers near the endocardium, the flow may nearly cease during systole.

In any event, the question seems to be relatively unimportant excepting in the presence of valve lesions. In aortic stenosis, the contraction of the muscle is powerful in comparison with aortic pressure, and here, as Green has demonstrated, there is a considerable reduction in systolic flow. This, together with narrowing of a coronary vessel in rheumatic heart disease, might well have serious consequences.

The question of coronary flow in aortic regurgitation is yet unsettled. Most observers, impressed with the low diastolic pressure, are like-

ly to assume that minute coronary flow will be diminished. In this connection, again, the experiments of Green are interesting. In "uncompensated" aortic regurgitation, when diastolic pressure fell but systolic was unchanged, Green found no change in systolic flow, but a 30 to 40 per cent decrease in the diastolic. After measures were taken to restore the mean pressure to normal, the systolic flow actually exceeded the normal by about 10 per cent. In the clinical case, the fall in diastolic pressure is nearly, if not quite, compensated for by a rise in the systolic. Thus, if Green's experimental results apply, the total flow will not be diminished unless diastole is unduly prolonged. Prolongation of diastole will be undesirable not only because of decreased flow, but also because more time is allowed for regurgitation of blood. The result of the latter factor will be an increased diastolic volume. The increased oxygen demand thus brought about may be as great as the decrease due to the slower rate. In the face of increased demand, the supply, due to the long diastole, may be unchanged or actually diminished. Therefore a relative oxygen deficiency should be expected particularly in the deeper layers of the left ventricle and in the septum. It is there that pathologic changes should occur most frequently. That is what the electrocardiogram also suggests. I do not know whether the pathologist will bear me out in this conjecture.

INFLUENCE OF NERVES

Turning now to the influence of nerves in regulating the caliber of the coronary vessels, controversy still rages in this field. Among physiologists, however, there is fair unanimity of opinion. Coronary dilatation or at least increased coronary flow is brought about by sympathetic nerve impulses. Teleologically, this is as it should be. During severe exercise, when the sympathetic system is brought into more or less general activity, it would be disastrous if coronary constriction occurred. However, experiments are not lacking which prove the presence of vasoconstrictor fibers in the cardiac nerves. Their influence may be largely limited to the larger vessels, the smaller vessels being supplied by vasodilator fibers. Other factors, such as the increased production of acid metabolites, may also contribute to dilatation

during exercise. The adrenalin, thrown into the blood stream during exercise, is regarded by some as a coronary constrictor, by others as a coronary dilator.

In the vagus nerve, on the other hand, it is rather generally agreed that vasoconstrictor fibers are predominant. As Anrep demonstrated, cutting the vagi in the dog increases coronary flow. Normally, when the cardiac output is increased, a reflex is brought into play which automatically dilates the coronary vessels.

There seems to be no dissent from the view that acid metabolites will cause dilatation of the coronary vessels just as will a moderate increase in hydrogen ion concentration. The action of the metabolites is probably upon the smaller vessels. All clinicians know of victims of angina pectoris who experience pain early after the beginning of exercise, but whose pain disappears as the exercise is continued. Metabolites formed in that part of the muscle suffering from lack of oxygen may cause dilatation of anastomotic vessels in these cases, or adrenalin may exert a dilating effect. In any event, one might suppose such cases would be particularly amenable to treatment.

The effect of heart rate upon coronary flow has not yet been settled. Wiggers quotes Anrep as concluding that the flow diminished as the rate progressively increases. Yet Anrep and Segall stated that increased rate, within limits which were not excessive, had no effect upon the output from the coronary sinus. F. M. Smith reported diminished minute flow when the heart was considerably accelerated. In this connection, it must be remembered that the length of systole decreases as heart rate increases, although not to the same degree as the length of diastole. I believe we are justified in concluding that decrease in coronary flow due to cardiac acceleration is unimportant unless the acceleration is great. Far more important is the increase in oxygen requirement which will be present unless the increased rate is offset by a comparable decrease in diastolic volume. When coronary sclerosis is present, an increased heart rate may be associated with a relatively static diastolic volume (or more correctly, a static diastolic fiber length in the muscle supplied by the damaged vessel). Under these

conditions metabolites accumulate and pain makes its appearance.

HEART IN ANGINA PECTORIS

In conclusion, I would like to present a brief picture of the heart in angina pectoris. Assume that a calcified plaque is located near the origin of the anterior descending branch of the left coronary artery; at rest, mental and physical, the patient experiences no discomfort. On walking a few blocks, particularly if he hurries or feels hurried, he is seized by the sense of suffocation and pain characteristic of the condition. What are the physiologic factors called into play?

At rest, the flow through the artery, though limited, is sufficient for the oxidative processes in the muscle. These are the combustion of fat and carbohydrate the energy being used for resynthesis of lactic acid which, in turn, on its break down, brings about the resynthesis of creatine and phosphoric acid to phosphogen. The flow through the stenosed artery may be aided by a flow through anastomotic vessels, and possibly, by a flow into and out of the thebesian veins or other openings from the left ventricular cavity. This accessory blood supply may indeed be so great that, when the anterior descending branch is finally occluded, no infarction occurs.

On exertion, the output of blood from the left ventricle is increased. Because of cardiac acceleration, or increased diastolic ventricular volume, or both, the demand for oxygen on the part of the muscle is increased. In part the increased demand is met by increased oxygen utilization from the blood, but this factor may already have been in operation before exercise. So now, in spite of the slightly increased volume flow through the affected area, there is a relative oxygen deficiency. Acid metabolites begin to accumulate; the sympathetic nervous system is more active; adrenalin is brought from the suprarenal medulla. These factors cooperate to dilate the smaller vessels in the area. If the dilatation of communicating branches is sufficient, enough oxygen may be supplied and the pain may disappear. More often the patient will cease his exertion. Then, in part through the cooperation of the factors enumerated, in part because of lessened work of the heart, the oxygen supply again becomes adequate and the

pain disappears. The raised aortic pressure will be a factor contributing more blood, but the increased load thrown upon the heart usually more than offsets this effect.

Amyl nitrite or nitroglycerin may give relief because of dilation of the anastomotic coronary vessels in some cases. But probably more often the fall in systemic pressure, relieving the muscle of part of its load and reducing diastolic volume, is the more important factor.

SUMMARY

If coronary thrombosis finally occurs, the outcome will depend largely upon the ability of anastomoses to carry on. For their development, if the picture is correct, daily or more frequent moderate exercise, within the patient's limitation as suggested by Conner, would seem to be sound treatment.

DIAGNOSIS OF CORONARY OCCLUSION

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It is really astonishing to realize that a disease entity, practically unknown prior to 1912, at the present time is amongst the chief causes of death in the medical profession and is a disorder which in its typical expressions is recognized by the veriest tyro in medical knowledge. Even the specialists in branches of medicine other than internal medicine make the diagnosis repeatedly and correctly. However, there do exist many cases which are by no means typical where the physician should be on his guard.

SYMPTOMATOLOGY

Anginal pain very commonly precedes an attack of coronary occlusion. Another premonitory symptom of some importance is ease of fatigue which may antedate the actual occlusion sometime before the occluding attack. When obstruction occurs the symptoms that develop may be divided into three groups: (1) those that take place immediately and at the time of the attack; (2) the heart symptoms, and (3) symptoms that develop as result of death of the heart muscle.

The Attack: The characteristic substernal pain referred down the left arm or up the left side of the neck may be unusual in that the reference is entirely to the epigastrium. On the other hand, the occasional case is seen in which there is no pain whatsoever. Shock is another expression of, or is dependent upon, the severe pain. There appear the usual symptoms of shock: low blood pressure, leaking skin and urinary suppression. Shortness of breath is of diagnostic moment chiefly in those patients in whom coronary occlusion occurs without pain.

Cardiac Symptoms and Signs: Dyspnea is almost an invariable concomitant of the condition. Congestive failure, with its train of events, develops commonly when there is extensive infarction. On the other hand, in some instances at no time does congestive failure evidence itself in any way but this applies particularly to the minimal degrees of occlusion that cause so much confusion at times in the diagnostician's mind. Of the physical signs, by far the most important to establish definitely the diagnosis is pericardial friction rub, but that does not occur until 24, 48 or even 72 hours after the attack. Usually in examining the heart immediately after the attack there is no characteristic palpatory nor auscultatory finding. The rhythm is regular for the most part. Ectopics may be noted but they are common in the type of individual who is subject to coronary occlusion. Heart block may occur and fibrillation, and occasionally ventricular tachycardia. As a rule these are not of any diagnostic moment. In the individual whose previous vascular findings are familiar or known to the physician an apex beat which, prior to the occlusion, was visible and palpable may not be seen nor felt. Very frequent murmurs which up to this time had been present will be noted as being absent. The heart sounds sometimes are muffled and a gallop rhythm is indicative of the struggle that the heart is making to carry on. The finding of pericardial friction rub sometimes determines a diagnosis which is *sub judice*. Unfortunately it is often extremely evanescent, lasting but a comparatively short time and may be missed. The pericardial friction rub occurs, of course, only if the area of infarction extends out to the epicardium.

Infarction Symptoms: The symptoms that

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arise as result of infarction in a muscle anywhere are the same as those which take place when there is death of a localized area of muscle tissue in the heart. Infarction elsewhere, of course, is readily recognized. The occurrence of fever and leukocytosis which may go to 25,000 and which is in fairly direct relationship to the degree of infarction, are important findings in the diagnosis of the condition. Pericarditis directly due to infarction has been mentioned under physical signs. The embolic phenomena are dependent upon emboli from the area of infarction which may be sent to distant sections of the body. Thus it is by no means uncommon to find cerebral apoplexy some days or even weeks after the initial insult. Cardiac rupture is dependent upon the infarction of the muscle and it likewise is usually a relatively late development and may be the result of too active physical effort before healing has taken place.

Atypical Expressions: Coronary occlusion is by no means a simple diagnosis to make in some instances. Particularly to be borne in mind is that the milder attacks are often very questionable. Many, if not most, of the characteristic symptoms are lacking and heart pain may be the only outstanding feature—and it may not be particularly severe. The sudden occurrence of dyspnea, without any demonstrable cause, is an atypical expression of coronary occlusion in a few cases. The area of infarction involves frequently the interventricular septum and there may be thrombosis of the blood vessels on both sides of the heart. Every once in a while it happens that at autopsy it is found that the cause of death was cerebral vascular blocking dependent upon emboli carried to the brain from the heart, the seat of an unrecognized infarction, and once in a while acute pulmonary infarction may have the same cause. The first etiologic factor may not be appreciated during life; the latter is more generally diagnosed correctly. The surgeons should be particularly interested in the abdominal manifestations of coronary occlusion because they may mimic to a very high degree some acute intra-abdominal catastrophe. It hardly seems necessary to point out nowadays that the diagnosis of acute indigestion causing death is erroneous. People do not die of acute indigestion. In coronary disease sometimes there is nausea,

vomiting and intense epigastric pain. More likely is it that the doctor will consider the acute abdominal pain plus nausea and vomiting as being due to such things as ruptured gastric ulcer, as being due to a gallbladder episode or even as being the result of acute pancreatitis than upon "acute indigestion." Many a patient has had an abdominal operation when the pathologic changes were above and not below the diaphragm. There is no one pathognomonic sign of the condition and the correct interpretation of symptoms depends upon close observation and study of the patient.

TREATMENT

As is the symptomatology characteristically divided into the symptoms of the attack, the heart and the infarction symptoms, so likewise may this division be used conveniently to indicate the line of treatment. Part of the treatment indirectly is symptomatic. Thus it is essential that pain be relieved and be relieved immediately. The pain throws extra work on the heart and it exaggerates the symptoms of shock. Therefore morphine should be administered at once if the diagnosis is unequivocal, and administered in doses sufficient to control the pain. Shock is combatted by the usual measures of heat, fluids and rest. If it is necessary to give stimulants, caffeine sodium benzoate should be given hypodermatically and should not be repeated unless absolutely necessary. Morphine is the sheet anchor directly after the attack. Cardiac symptoms should be controlled as much as possible by rest. The infarcted heart is a laboring heart and it should be kept quiet by rest and morphine. Cardiac stimulation is indicated in those patients who rapidly develop congestive failure. If cardiac stimulation is indicated, a drug should be given which will act promptly and whose effects will not be prolonged. To meet this requirement ouabaine in doses of 0.5 mg. to 1.0 mg. hypodermatically is probably the most satisfactory drug. Digitalis may have to be used but digitalis stimulates the heart muscle and for some time. The purpose of treatment is to keep the heart as quiet as possible and not make it do more work: This is absolutely essential. Rest is the third important adjunct to treatment of the heart and lastly oxygen in the cyanotic,

dyspneic patient is sometimes a life saver. Quinidine should be given within a few hours. Administration of quinidine is in part theoretic but it does decrease cardiac irritability and lessens conductivity so that sedative effects of this drug may prevent some of the mechanistic derangements developing which in turn may cause death. Ventricular fibrillation is an excellent example.

After a period of time if signs of failure develop or failure has not responded to rest and treatment, then digitalis may be started but, until the area of infarction is reasonably replaced by fibrous tissue, it is best to withhold this drug.

Within a few days after the onset of occlusion it is advisable to start the use of the xanthine drugs of which aminophyllin has been more generally used probably than any other. Because theocalcin is less irritating to the stomach than other xanthine preparations, it may be used in doses of 0.1 gm. taking two or three tablets with each meal. This drug should be kept up indefinitely. Xanthine preparations increase coronary flow and presumably permit a more efficient coronary circulation than there would be were they not given. It is a good idea to keep up with one or another of these preparations for the remainder of the patient's life.

I have omitted any mention of the electrocardiogram deliberately, because the scope of this paper does not permit of discussion of this instrument of precision nor is it available for the most part to the average physician who first sees conditions of coronary occlusion. The electrocardiogram, suffice it to say, is of inestimable value when positive information is given but when it is negative its value is nil.

CONCLUSIONS

The impression should not be widespread that the diagnosis of coronary occlusion is always a simple matter. Atypical cases suffice to keep the physician from too great self-confidence in recognizing this disorder. In the immediate treatment of coronary occlusion the most definite and the first indication is cardiac and mental rest. The second, third, fourth and fifth indication is continuation of rest over a long period of time and then only a gradual return to the usual moderate physical activities of life.

THE SURGICAL TREATMENT OF CORONARY DISEASE

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The original disquisition of Heberden¹ concerning cardiac pain due to coronary artery disease first appeared in 1786, but this important disorder was not clearly recognized until relatively recently, when Herrick² made his first important contribution in 1912. It is indeed amazing that a disease of such vital significance and relatively frequent occurrence, particularly among physicians,³ should be relegated to almost complete desuetude for over a century and a quarter. However, during the past quarter of a century intensive anatomic, physiologic, and experimental investigations have established a more elucidative comprehension of the fundamental background of the malady and a more rational therapeutic approach.

The present status of the surgical treatment of coronary artery disease and cardiac pain involves a consideration of three main methods of attack: (1) the sympathetic nervous system; (2) the thyroid, and (3) the development of a collateral blood supply to the heart.

SYMPATHETIC NERVOUS SYSTEM

The rationale of the surgical procedures which attack the sympathetic nervous system is based upon an interruption of cardiosensory and motor pathways. The first successful clinical application of sympathectomy was based upon the physiologic speculations of Francois Franck,⁴ in 1899, and first clinically tested by Jonnesco⁵ in 1916, in a case of angina pectoris. The brilliance of this first successful result which stimulated universal interest was soon dimmed by many disappointing failures in the hands of other surgeons. As a consequence, various modifications were advocated and divergent theories proposed, which only added to the already existing bewilderment. In order to explain the inconsistent results and better understand the rationale upon which this method of surgical attack is based, it is necessary to review the underlying anatomo-

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mical and physiological principles in the light of recent investigations.

The presence of typical somatic afferent fibers in the sympathetic cardiac rami is now definitely established. The histologic characteristics of these fibers have been excellently described by Ranson and Billingsley,⁶ and Stohr,⁷ and corroborated by Heinbecker.⁸ Whereas these fibers utilize the sympathetic pathways to the heart to transmit afferent impulses from this organ to the central connection, actually they are true somatic afferent fibers and not a real part of the autonomic nervous system. The neurones to these sensory nerve endings converge in the periarterial plexus of the coronary arteries, traverse the superficial and deep cardiac plexuses, and course in the middle and inferior cardiac nerves which join the corresponding cervical ganglia of the sympathetic chain. They then descend the sympathetic cervical chain to the upper thoracic ganglia, and finally reach their cells in the spinal ganglia by passing through the white rami communicantes into the central portions of the first thoracic and upper four or five intercostal nerves. Brauecker⁹ and Ionesco and Enachescu¹⁰ have recently demonstrated that there also exist thoracic cardiac nerves which run directly across the posterior mediastinum to the upper thoracic sympathetic ganglia. According to Ranson and Billingsley,⁶ the only purely motor pathway is the superior cardiac nerve. The recent experimental investigations of White, Atkins, and Garrey¹¹ have further corroborated this concept of the cardiosensory pathways. Thus, it can be readily observed, and this should be particularly emphasized because of its technical importance, that all of the sensory pathways from the heart converge on the upper four or five thoracic sympathetic ganglia.

The vasomotor afferent or accelerator impulses to the heart and coronary arteries differ from the sensory in that they travel in the true sympathetic neurones. Langley¹² demonstrated that accelerator impulses leave the cord by the upper five thoracic pairs of anterior route and white communicating rami. He further assumes that their transmission occurred by afferent fibers which traveled upward in the sympathetic chain to synapse in the three cervical sympathetic ganglia and send their postganglionic neu-

rones to the heart through the cervical cardiac nerves. Aside from these well established cervical cardiac nerves there also exist the thoracic cardiac nerves which form direct motor pathways between the upper four or five thoracic ganglia and the heart.^{9, 10, 11, 13, 14}

There is still considerable controversy as regards the nervous control of the coronary circulation and the experimental evidence seems merely to aid in the confusion. The opinion held by one group of investigators^{15, 18} is that vasoconstrictor fibers occur chiefly in the vagus and vasodilators in the sympathetic nerves. On the other hand, Leriche and his co-workers^{19, 20} are of the opinion that the innervation of the coronaries follows the general law of vasomotor innervation; that is, that coronary constriction is mediated by the sympathetics.

Since Jonnesco's⁵ original operation of removing the entire cervical sympathetic chain, including the stellate ganglion, a number of operations have been advocated on the cervical sympathetics, based upon divergent rationales with varying degrees of success. Coffey and Brown²¹ advocated simplifying the procedure to extirpation of the superior cervical sympathetic ganglion or cutting the cardiac branches of this ganglion. Although Kerr²² is still an enthusiastic advocate of this procedure, it is difficult to explain the good results claimed by these authors in the light of recent investigations. Because Danielopolu²³ contends that accelerator and dilator impulses pass through the stellate ganglion, he strongly condemns its removal and recommends that the cervical sympathetic chain be sectioned above it, that the vertebral nerve be also severed as well as the depressor nerve of Hofer or any corresponding nerve present, and the nerves which spring from the cervical sympathetic chain above the superior cervical ganglia and course to the heart. Whereas Leriche²⁴ originally conformed to this view, more recently he^{25, 26} advocates stellate ganglionectomy. Although other modifications have been suggested, in the main, the attack has been upon the cervical sympathetic chain and the stellate ganglion.

RESULTS

The results of these various procedures have been excellently summarized by Leriche and Fontaine^{27, 28} in a collected series of 172 cases

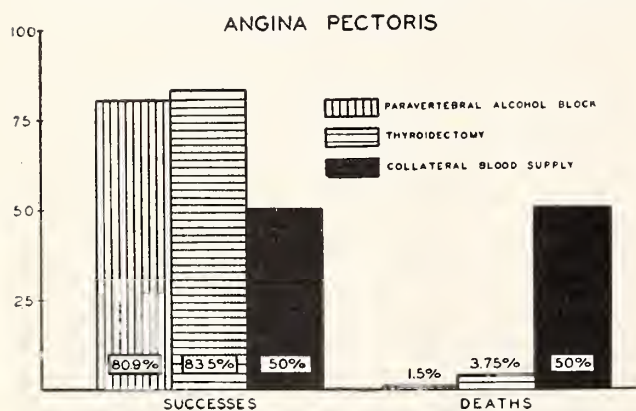
including their own. Of 163 cases in this group in which the results were known, 85, or 52.5 per cent, obtained good results, 33, or 20.2 per cent, showed some improvement, 21, or 12.9 per cent, showed failures, and 24, or 14.7 per cent died. Thus, a little over 70 per cent will show some improvement to a greater or lesser extent. The recent anatomic and experimental investigations discussed above clearly reveal the explanation for the inconsistent results of cervical sympathectomy and the fact that better results are not obtained. Obviously, unless the accessory pathways through the thoracic cardiac nerves are interrupted, cervical sympathectomy alone is doomed to failure in a large number of instances.

Although the ideal procedure would be resection of the upper four or five thoracic sympathetic ganglia, because in this way all fibers carrying sensory impulses from the heart would be interrupted, such a procedure in patients who are admittedly poor risks would undoubtedly carry an unjustifiably high mortality. However, this difficulty has been obviated by the method of Mandl²⁹ which consists of the paravertebral alcohol injection of the thoracic sympathetic ganglia. In this country, Swetlow³⁰ was the first to advocate paravertebral alcohol block for cardiac pain and to describe the technic in detail. More recently, Mixer and White^{31, 32} have perfected the technic and placed it upon a more rational basis. The combined results of paravertebral alcohol injection for angina pectoris in 38 cases reported by White³³ and 30 cases

reported by Marvin³⁴ are illustrated in graph 1. It will be observed that successful results were obtained in 80.9 per cent, failures in 17.6 per cent, and fatalities in 1.5 per cent. A comparison of these results with those of cervical thoracic sympathectomy emphasizes more strongly the advantages of the former procedure. There is a higher percentage of successful results, and the mortality is considerably lower. Another advantage is the simplicity of performance, which of course makes it a procedure attended with little or no danger, particularly in those patients who are obviously poor risks. However, a fair, critical analysis of the procedure must not fail to mention a few of its disadvantages. Fortunately, these are not very significant. The effect of the alcohol is not permanent and in some instances will necessitate re-injection. The fact that it is a procedure employing the blind injection of a destructive solution will in some cases produce certain complications. The difficulties of limiting the effect of the injected alcohol will occasionally produce a painful neuritis, and pleural injury is a constant hazard.

TECHNIC OF PARAVERTEBRAL ALCOHOL INJECTION

The technic of paravertebral alcohol injection as described by White³³ is relatively simple. He



Graph 1. Comparison of three methods of treatment in coronary artery disease and cardiac pain. The figures on paravertebral alcohol block are those tabulated by White³³ and Marvin³⁴ on a series of 68 cases; those on thyroidectomy are the results obtained in a collected series reported by Parsons and Purks⁴⁸ and the results on collateral blood supply were reported by Beck⁵⁸.

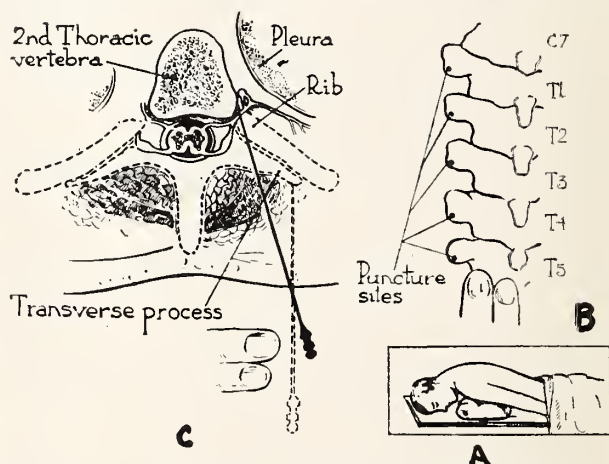


Fig. 1. Diagrammatic representation of technique of paravertebral alcohol injection. (A). Patient lying in prone position with pillow supporting chest so as to produce hyperflexion of neck. (B). Puncture sites are on a horizontal line approximately two to two and a half fingerbreadths lateral to spinous processes of the seventh cervical to fifth thoracic vertebrae, inclusive. (C). Dotted needle indicates first position with point touching transverse process or angle of rib. Needle in bold type indicates final correct position, which is approximately two fingerbreadths deeper than first position and directed medially towards midline about 20 degrees. Point of needle is in contact with lateral aspect of body of vertebra immediately adjacent to sympathetic ganglia and chain.

prefers to have the patient lying on his side with the knees drawn up, the shoulder at the edge of the bed, and the head deflected forward as in performing a spinal puncture. In our own experience it has been found more desirable to have the patient lying face downward with the chest supported by pillows, as shown in figure 1A. The bony landmarks consist of the spinous process, of the seventh cervical vertebra, and the first to the fifth thoracic inclusive. In this region, the spinous processes are imbricated like shingles on a roof, and the tip of each one of these spinous processes lies at an exact horizontal level of the transverse process and the posterior angle of the rib next below, and as shown in figure 1B, the highest prominent vertebral spine, the seventh cervical, marks the level of the first rib. By means of a fine hypodermic needle an intracutaneous wheal of novocaine is formed at the points of injection. These are made from $3\frac{1}{2}$ to 4 cm. lateral to the spinous processes. This is approximately two to two and a half fingerbreadths (fig. 1 B). The points so marked lie opposite the seventh cervical and the upper three thoracic spines. Needles 8 to 10 cm. in length are then inserted at these points perpendicular to the surface of the back and at a depth varying from 3 to $3\frac{1}{2}$ cm. to touch the upper four transverse processes. The needles are then inclined slightly in a caudal direction so as to slip beneath the transverse process or the angle of the rib, directed medially about 20 degrees towards the midline, and inserted deeper for about 3 cm., or approximately two fingerbreadths (fig. 1 C). At this depth bone is usually touched, indicating that the needle is in contact with the lateral aspect of the body of the vertebra. At this stage aspiration should always be done in order to determine whether the needles lie in a blood vessel or the subarachnoid space. Obviously, if blood or spinal fluid is aspirated then the position of the needles must be changed. When the needles have been placed in the correct position, 2 c.c. of 3 per cent novocaine adrenalin solution should be injected in each. Within a period of fifteen minutes anesthesia should appear in the axilla, a short distance down the inner surface of the arm, and over the third and fourth ribs. A well defined Horner's syn-

drome and anhydrosis of the entire arm and the side of the neck and head should be present. The failure of these signs to develop indicates that the needles have not been correctly inserted, and a re-insertion should be done. After it has been determined accurately that the needles have been properly placed, it is preferable to inject 3 c.c. more of novocaine through each in order to secure widespread anesthesia and to make the final injection of alcohol painless. Three to four cubic centimeters of 95 per cent alcohol is then slowly injected in each needle.

THE THYROID

Whereas the relationship between thyroid activity and cardiac disease has been implicit in the expositions of numerous authors for over a century and a half, it was not until relatively recently that total thyroidectomy in the treatment of chronic non-thyrogenous heart disease has been placed upon a rational basis. The rationale of total thyroidectomy in the treatment of cardiac disease is based upon two factors: first, a decrease in tissue metabolism consequent to the removal of thyroid secretion, and second, an interruption of cardiosensory impulses which is coincident to the operative removal of the thyroid and depends upon the anatomic relationship of the cervical cardiac to the thyroid glands.

In the normal individual the speed of blood flow has been shown by Blumgart and Weiss³⁵ to be directly dependent upon the metabolic demands of the body. It is now a well established fact that hyperactivity of the thyroid gland results in increase in tissue metabolism, and conversely, hyposecretion of the thyroid gland produces a diminished tissue metabolism. Blumgart and his co-workers^{36, 37} showed that in thyrotoxicosis not associated with cardiac disease there was a commensurable increase in speed of blood flow, and conversely, in uncomplicated myxedema there was a considerable decrease in speed of blood flow. It is further observed that in cardiac insufficiency and in angina pectoris this normal relationship between speed of blood flow and metabolism no longer exists. Because it appears that in cardiac disease the heart is unable to meet the metabolic demands of the tissues, it seems reasonable to assume that this situation should be relieved best by

simply correspondingly diminishing these metabolic demands. This could readily be done by removing the thyroid which so influences tissue metabolism.

The mechanism of relief of pain immediately after total thyroidectomy is still controversial. Blumgart and Berlin³⁸ are of the opinion that this early relief from pain is the result of a coincidental division of cardiosensory fibers at the time of operation. The anatomic and clinical investigations of Weinstein and his co-workers^{39, 40} have further corroborated this concept. On the other hand, Levine and his associates^{41, 42} as the result of their studies on the altered sensitivity to epinephrine, are of the opinion that the relief of pain immediately following total thyroidectomy is due to a lessened sensitivity to epinephrine. Cutler and his associates^{43, 44, 45} have offered experimental evidences of the truth of this view.

RESULTS

During the past four years since Cutler⁴⁶ and Berlin⁴⁷ independently performed the first ablation of a normal thyroid for heart disease, a large number of operations have been done and the results reported by numerous investigators with a consequent better understanding of the indications, limitations, and selection of cases. In an attempt to form a thorough evaluation of the procedure, Parsons and Purks⁴⁸ tabulated data on a large group of patients on whom the operation had been performed. The details were obtained from a fairly complete survey of the literature and from inquiries sent to various clinics throughout the country. Of 133 patients with angina pectoris on whom operation had been performed 71, or 55.46 per cent, showed excellent results, and 36, or 28.12 per cent, were moderately improved; 5, or 3.9 per cent, were slightly improved, and 15, or 4.5 per cent, were classed as failures. The operative mortality was 3.75 per cent (graph 1). These results correspond fairly closely with those reported by Weeks⁴⁹ in a somewhat similar tabulation of 100 patients on whom the operation had been done in twenty-six clinics. If the excellent results and moderately improved groups are considered together as satisfactory it will be observed that 83.58 per cent showed good results in the series reported by Parsons and Purks, and 91.4 per

cent in those collected by Weeks. Thus, these statistics indicate that it is undeniably a distinctly valuable procedure in relieving cardiac pain. Whether the procedure prolongs life or not cannot be answered. It is admittedly a procedure attempting to relieve symptoms and not to affect cardiac pathology.

There are certain disadvantages of the procedure that must be considered in its proper evaluation. Total ablation of the thyroid is difficult in any type of case, and in those patients who are admittedly poor risks it will carry a very definite mortality. There will also be a fairly high incidence of complications. In the collected series reported by Parsons and Purks, recurrent laryngeal nerve injury occurred in 8.6 per cent and tetany in 10.3 per cent of the cases. Myxedema is also another disadvantage of the procedure. Whereas the undesirable consequences of artificially induced myxedema can be alleviated to some extent by the proper administration of thyroxin, it must be remembered in order to obtain the full benefit of the operation these individuals must be kept at a low basal metabolic rate. Adequate doses of thyroxin to obviate the effects of myxedema may cause the patient to suffer from angina and a reduction of thyroxin to relieve the angina may result in the ill effects of myxedema.

The criteria for the selection of these patients for operation have become better understood with increasing experience. Blumgart⁵⁰ advises against the operation in the presence of rapidly progressing cardiovascular disease, such as malignant hypertension or syphilitic cardiovascular disease. The operation is also contraindicated in the presence of a low preoperative basal metabolic rate. Mixter, Blumgart, and Berlin⁵¹ hesitate to operate upon those patients in whom the preoperative basal metabolic rate is below 15 per cent and consider a basal metabolic rate of 20 per cent or more a definite contraindication to operation. The presence of a recent coronary occlusion and renal insufficiency, active infection, such as bronchiectasis, lung abscess and active rheumatic involvement, are further contraindications to operation.

TECHNIC OF TOTAL THYROIDECTOMY

Although no attempt will be made here to give a detailed technical discussion of total extirpa-

tion of the normal thyroid gland, there are certain aspects of the technic which demand consideration. The procedure is not one that can be undertaken lightly, and should never be performed by one who is not thoroughly familiar with the normal anatomy of the thyroid gland and its relationship to the surrounding structures, as well as the variations which may occur. The surgeons who have had greatest experience with the procedure advocate the use of local analgesia in preference to general anesthesia. Avoidance of injury to the recurrent laryngeal nerves and the parathyroid gland necessitates extreme care in dissection. Cutler et al.,⁵² advise removing each lobe of the thyroid by working from that side of the patient because of the fact that in their first few cases they injured two left recurrent nerves while doing the procedure according to their previous method of operating entirely from the right side. We⁵³ have also made a similar observation and consider this a valuable suggestion.

COLLATERAL BLOOD SUPPLY

The development of a collateral circulation by the production of a new blood supply to the heart by grafting tissues to the myocardium as devised and advocated by Claude S. Beck⁵⁴ is an entirely new principle in the surgical treatment of coronary disease. The rationale of this procedure is based upon the attempt to correct the decreased myocardial vascularity which invariably occurs with coronary sclerosis. Because the compensatory circulatory mechanisms of the heart are dreadfully inadequate due to the peculiar anatomic arrangement of the vascular supply of the myocardium, it seems reasonable to assume that if other anastomotic channels to the heart could be surgically produced the previously inadequate compensatory mechanism might be changed into one that is adequate.

The apparent difficulties confronting this procedure were fully appreciated by Beck, but he states that there were two encouraging facts which seemed to indicate the feasibility of this method. Hudson et al.⁵⁵ demonstrated the presence of blood vessels in the fat at the base of the heart anastomosing the coronary system with branches of the aorta, and Moritz, Hudson, and Orgain⁵⁶ established the existence of blood vessels in pericardial adhesions. Beck and his

co-workers began an extensive series of experiments in 1932 which definitely established the possibility of deliberately producing anastomotic channels which could serve a functional purpose.

These investigators first produced a collateral vascular bed by destroying the mesothelial envelope around the heart by roughening the lining of the parietal pericardium and the epicardium. Various tissues, such as fibrous pericardium, pericardial fat, pedicle grafts of pectoral muscle and omentum, were used for the new vascular bed, and within three weeks anastomoses between the grafts and the heart could be demonstrated. This was established by the presence in the myocardium of a dye previously introduced by way of the graft and also by injecting a solution of barium sulphate into a coronary artery and tracing the location of the solution in the chest by roentgenograms⁵⁷. In one group of experiments, it was found that the vascular graft could act as a protective measure against subsequent complete occlusion of one of the coronary arteries. They were also able to show that it was extremely important to maintain a uniform distribution of blood flow, and from their experiments they believe that a collateral vascular bed effects an equal distribution of blood flow to the myocardium by transporting blood from extracardiac sources into the myocardium and from one part of the heart where the circulation is good to another part of the heart where the circulation is deficient.

Encouraged by these successful experimental investigations, they performed the operation for the first time on a patient with coronary sclerosis on February 13, 1935. This patient was a white male laborer, 28 years of age, who had typical substernal pain of two years' duration and was finally forced to give up his work. The patient made an excellent recovery from the operation and for the past year has been employed as a gardener, doing the work of a man in good health. He has no pain and takes no drugs.

In his most recent communication, Beck⁵⁸ states he has performed the operation upon 16 patients with a mortality of 50 per cent. In justification of such a high mortality the author states that this was an extremely bad group of patients with advanced stages of coronary

sclerosis. They were patients who had previously concluded that they had nothing to risk because life without improvement was not worthwhile. However, the author is of the opinion that this frightfully high mortality can be reduced, first by a careful selection of patients who do not have a too far advanced coronary sclerosis, and second, by reducing the magnitude of the operation. He has already simplified the technic, and in the last five patients in whom this was done there were no operative deaths.

The technical procedure consists of grafting a part of the pectoral muscle upon the myocardium. The skin incision is made transversely over the precordia, and the pectoral muscles are separated from the chest wall by blunt dissection. The pectoral muscle is transected laterally about four inches from the sternum to make a graft with the pedicle attached along the sternal margin. The fifth and sixth costal cartilages are removed and the parietal pericardium is opened. By means of a burr, the lining of the pericardium and epicardium is roughened. More recently, he has employed powdered beef bone in the pericardial cavity for the purpose of producing a low grade foreign body reaction. The muscle graft is divided into two parts by incising parallel with its fibers along the lower margin of the third rib and the upper part of the graft is placed beneath the sternum to the right ventricle, while the lower is applied to the left ventricle. The pericardial cavity is then widely opened so that the adjacent vascularized tissues are in contact with the anterior aspect of the heart.

SUMMARY

The three main methods of attack in the surgical treatment of coronary artery disease and cardiac pain have been considered and discussed. Any attempt to compare the advantages and disadvantages of these three methods will meet with certain difficulties. However, their evaluation from the standpoint of successful results and mortality reveals that thyroidectomy has a slight advantage over paravertebral alcohol and both have a marked advantage over collateral blood supply. On the other hand, the mortality from paravertebral alcohol block is practically negligible, with thyroidectomy having

a mortality two and a half times as high. The 50 per cent mortality in the collateral blood supply method limits its practicability (graph 1).

Because these three surgical methods of attack have different rational bases, and because coronary artery disease and cardiac pain varies in its pathologic physiology, it is possible that each method may be appropriately applied to certain groups of patients. A critical analysis of each method and its rationale and a correlation of this with the various types of coronary artery disease and pain suggest the possibility of certain indications for each method. Sympathectomy is probably best indicated in patients who are obviously poor risks. They are usually elderly individuals with marked sclerotic changes and fibrotic myocardial degeneration. They also included those patients who have very severe pain, or whose angina is particularly aggravated by emotional disturbance rather than by effort, and those whose basal metabolism is very low. Thyroidectomy is probably best indicated in patients who have a normal or high basal metabolic rate. They should be relatively good risks, and their angina should be one of effort rather than of emotion. The group of patients which is best suited for the collateral blood supply method should be individuals who have had a recent thrombosis, or show little evidence of arteriosclerosis or fibrotic muscular degenerative changes.

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THE PATHOLOGY OF CORONARY DISEASE

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NEW ORLEANS

The morphologic pathology of cardiovascular lesions, which was a subject of such lively interest twenty years ago, has been neglected recently and relegated to the background by the numerous functional, biochemical, and nervous theories of circulatory failure. This disregard of the structural changes in cardiac insufficiency is undoubtedly due to the frequent discrepancy between the severe clinical syndrome of heart failure terminating in death and the apparent lack of structural changes found in the heart at autopsy. Expressions such as "paradox myocardosis" (Hyman) or "essential myocardial insufficiency" (Messinger), which have been introduced to explain cardiac failure without cardiac pathology, are merely new terms and do not solve the important problem of correlating the morphologic and physiologic pathology of heart disease. In attempting to estimate from the autopsy findings the functional condition of the heart previous to death it must be considered that any accumulation of pathologic lesions is already proof of severe functional embarrassment of the entire organ. Conditions in the heart are entirely different from those found in other organs of the body, such as the liver, spleen, or kidney, where even extensive and permanent pathologic changes will not disturb the functional activity of the remaining healthy tissue. The morphologic changes in the heart in coronary disease lend support to this statement. Changes in the coronary arteries cause ischemia of circumscribed areas of the myocardium with severe degenerative or necrotic changes, and the destruction of even small parts of the heart muscle will have a deleterious effect upon the function of the entire heart.

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ETIOLOGY

Lesions in the coronary artery resulting in obstruction or narrowing of the lumen are chiefly caused by arteriosclerosis, syphilis, and mycotic or rheumatic infections. Of these three, arteriosclerosis is by far the most common etiologic factor in coronary disease. It may affect the vessels of the heart in the form of a patchy atheroma of the intima with formation of atheromatous ulcers and subsequent thrombi or in the form of diffuse hyperplastic sclerosis of the intima with narrowing of the lumen and considerable thickening of the wall. The third type of arteriosclerosis in the coronary arteries, the mediasclerosis of Moenckeborg, is rarely found. Diffuse hyperplastic sclerosis is undoubtedly the more benign form of arteriosclerosis (Benda) and rarely leads to occlusion of the larger branches of the coronaries but is responsible for gradual obliteration of smaller branches only. Atheromatosis which gives the intima of the arteries a yellow patchy appearance is especially common in older persons, and the perforation of the atheroma into the lumen of the vessel will cause thrombus formation with sudden occlusion of the lumen of the coronaries. The etiology is still unknown but seems to be linked in some way with a faulty cholesterine metabolism (Leary). Syphilis affects the circulation of the heart in two ways: Luetic mesaortitis at the root of the aorta may seal the mouths of the coronaries or intima-sclerosis over a focus of luetic mesarteritis of the coronary vessels may lead to narrowing and occlusion of the lumen. It is not uncommon for rheumatic or mycotic infections to produce an acute focal mesarteritis of the coronary vessels with intimal thickening and narrowing of the lumen (Kaufmann). Occasionally obstructions of the lumina of the vessels of the heart may be caused by emboli originating from a bacterial endocarditis or from a diseased aorta. Traumatic injury of the coronary vessels has been reported by Fraenkel.

Because of the overwhelming frequency of arteriosclerosis as the etiologic factor in coronary disease, the changes in the heart following narrowing or occlusion of the lumen of the coronary vessels are commonly discussed under the heading of arteriosclerotic heart disease.

INCIDENCE

In an analysis of 73,000 autopsy protocols of the larger pathologic institutes of Germany, Lucadou concludes that coronary thrombosis and coronary embolism are steadily increasing in number. In an analysis of 1200 unselected cases of structural heart disease, Gager and Dunn ascribed 26 per cent to coronary sclerosis. In White's compilation of data on the etiology of organic heart disease from New England, New York City, Virginia, Texas, Iowa, Minnesota, the Rocky Mountains, Oregon, England, and Norway, the incidence of coronary sclerosis varied between 10 and 43 per cent. In 5213 consecutive autopsies performed in the Charity Hospital of Louisiana at New Orleans from 1932 to 1935, 749 cases of fatal organic heart disease were recorded. In 165 (22 per cent) definite evidence of coronary disease with

damage of the myocardium was found at autopsy. In 41 patients death occurred immediately or shortly after occlusion of a larger branch of the coronary vessel. These figures are slightly lower than those of Barnes and Ball from the Mayo Clinic, who found 4.9 per cent coronary disease in 1000 consecutive postmortem examinations.

Sex, race, and age are considered factors of great influence in the incidence and distribution of arteriosclerotic heart disease and reflect the importance of constitutional factors in the etiology of coronary lesions. The consensus of opinion at the present time is that coronary disease is more common in the male than the female, in the white than the colored race, and that its maximum frequency occurs in persons over 50 years of age. My study, as shown in the following table, supports this belief.

TABLE I

Type of Disease	Race		Sex		Age	
	White Per cent	Colored Per cent	Male Per cent	Female Per cent	Below 50 Per cent	Above 50 Per cent
I. Fatal organic heart disease	39.3	60.7	68.7	31.3	43.8	56.2
II. Arteriosclerotic heart disease	50.3	49.7	73.9	26.1	18.8	81.2
III. Deaths from coronary occlusion	70.7	29.3	76.2	23.8	24.3	75.7

Group I of the table lists all cases of fatal organic heart disease recorded in 5213 consecutive autopsies. In this group the high incidence in the colored race is explained by the large number of cases of syphilitic cardiovascular disease encountered amongst the colored patients of the hospital. The same factor is also largely responsible for the large number of persons who succumbed to heart failure below the age of fifty.

Group II includes all cases in which a diagnosis of coronary disease was made at autopsy. A predominance of males and persons over fifty years of age is noticeable. Both races are about equally represented in this group.

Those cases in which recent occlusion of a larger branch of the coronary vessels was directly responsible for the death of the individual are separated from the total number of cases of arteriosclerotic heart disease and are listed in group III. Although I agree with White that such a separation, particularly from the pathologic point of view, is rather artificial, I have felt this subdivision to be justified by the striking and important clinical picture of coron-

ary occlusion. Although the incidence according to sex and age is about the same as in group II, I noted a marked difference in the distribution according to race, 70.7 per cent of all cases having occurred in white individuals. The principal reason for this predominance in the white race is the fact that coronary thrombosis secondary to coronary sclerosis is rare in the colored race. Hansmann and Schenken suggest that the racial response of the fibroblastic tissue in the intima of the coronary arteries towards atheromatous material is responsible for this difference. Gross and microscopic examinations of the vessels in negroes with arteriosclerosis revealed deeper lying atheromatous plaques with greater subendothelial tissue proliferation, a decreased incidence of atheromatous ulcers, and a greater involvement of the media by the atheromatous process, resulting in localized dilatation of the vessels which appeared to aid temporarily in the maintenance of adequate patency. Although rare, coronary thrombosis does occur in the negro race, and statements to the contrary which appear in the clinical literature are erroneous.

GROSS PATHOLOGY

The morphologic changes in the heart with coronary disease depend upon the size of the vessel. Obstruction of both coronary arteries will cause instantaneous death without any noticeable morphologic changes. Occlusion of a larger branch of the coronary vessels will produce an infarction of the myocardium. In such cases the patient does not usually die immediately but lingers for several hours or several days, depending upon the size of the infarct. At autopsy the pericardium over the infarcted area shows a slight amount of fibrinous exudate and congestion. The myocardium reveals a recent infarction characterized by a pale clay colored area with an irregular border. This border is sometimes dark red due to the hemorrhage which occurs at the edge of the infarct. The consistency of the recent infarct is usually firm. After several days the color and the consistency of the infarct undergo characteristic changes which are caused by the autolytic processes in the necrotic area, and by the organization of the infarct. Softening of the ischemic heart muscle or myomalacia frequently causes death shortly after the coronary attack due to liquefaction necrosis of the infarcted myocardium. The immigration of leukocytes and the deposits of fat in and around the zone of infarction give this area the characteristic yellowish appearance which it maintains until organization of the infarct



Fig. 1. Extensive fibrosis of the myocardium in a heart with occlusion of a branch of the coronary arteries.

takes place. The end-product of this process is represented by a myocardial scar which is first pink, then white in color. Infarcts of the heart often show certain sites of predilection, occurring more frequently in the myocardium of the ventricles than in the auricles, and more frequently in the left than in the right ventricle. The lower third portion of the anterior wall of the left ventricle, the upper part of the posterior wall, and the papillary muscles of the left heart are the most frequent locations. If the infarction involves part of the endocardium, a mural thrombus will form over the necrotic area and further endanger the life of the patient. More extensive destruction of the heart muscle will lead to the formation of large fibrous plaques which may become calcified. When such an area of myocardial fibrosis is bulged outward by the pressure of blood, it forms an aneurysm of the heart, sometimes causing sudden death by rupture into the pericardial cavity (acute heart aneurysm). The place of predilection for the formation of heart aneurysms is likewise the anterior wall of the left ventricle and the apex of the heart.

In the differential diagnosis of arteriosclerotic heart disease against other injuries of the heart muscle leading to similar fibrosis of the myocardium, the clinical history of the patient is often indispensable. In many instances it will be impossible to recognize the etiologic factor of the scar formation since the coronary vessels and the myocardium may be equally damaged by the injurious agent, as for example in syphilis.

In the correlation of the gross pathologic lesions with the clinical symptoms of the disease, it must be remembered that the latter are very changeable. Extensive infarction of the heart may produce no clinical symptoms till sudden death occurs, while on the other hand, small scarcely noticeable infarcts may produce severe suffering. The presence of spastic contraction of the vessels with brief but extremely severe ischemic pains in the heart region may explain those "heart attacks" which occur without evidence of demonstrable myocardial lesions.

HISTOPATHOLOGY

Microscopic evidence of arteriosclerotic heart disease, which is much more frequently present

as grossly visible myocardial scars, can be divided into two groups: Changes caused by insufficient blood supply due to narrowing of the lumen of the coronary vessels and changes resulting from complete lack of blood supply due to obstruction of the lumen. The consequence of insufficient blood supply to the cells of the heart muscle is a series of degenerative processes, the severest degree of which is fatty degeneration. The latter can be taken as a sign of irreparable damage to the muscle cells and is most frequently observed in the papillary muscle bundles which have a poorly developed network of anastomosis. Because of the continuous motion of the muscle cells, fat droplets within the plasma are very finely emulsified and cannot be seen in the usual hematoxylin eosin preparation. With the Sudan stain, however, a surprising picture is often obtained showing an extensive amount of fat in the muscle cells. Although found very frequently in chronic coronary disease, fatty degeneration of the myocardium can also be produced by toxic, infectious, and metabolic processes affecting the heart and the differential diagnosis as to the etiologic factor responsible for the lesion is often difficult. Parenchymatous degeneration represents a less severe degree of damage to the myocardial cells, and restoration to normal is possible. Hyalinized muscle fibers are soon broken up and removed by phagocytosis. The final result of repeated and severe degenerative changes is the destruction of a large number of muscle cells, which will be replaced by fibrous tissue. Thus a rather diffuse and usually not very severe fibrosis of the myocardium is produced similar to the end-stages of toxic or infectious myocarditis. Study of the smaller vessels of the heart and consideration of the clinical history and the age of the patient make it often possible to recognize the true etiologic factor.

When the circulation in a circumscribed area of the myocardium is suddenly cut off, a massive necrosis of the muscle fibers is produced. The development of the histologic picture in cases of infarcts of the heart depends largely upon the interval which has elapsed between the time of the infarction and the examination of the specimen. Very recent infarcts show coagulation necrosis with the shape of the single

muscle fibers well preserved but with loss of the staining property of the nucleus. If the patient dies a few hours after the infarction occurs, diffuse hemorrhage between the necrotic muscle fibers, the result of the sudden cessation of the capillary blood pressure in the necrotic area, is usually noticed. If the patient dies days after the infarction, liquefaction necrosis has led to complete destruction of the normal histologic picture, and signs of reparative inflammation become evident. An invasion of the necrotic tissue by polymorphonuclear leukocytes takes place which is sometimes so severe that sterile abscesses are formed. "The dead muscle is gradually removed and replaced, first by an open granulation tissue rich in vessels, and later by fully formed scar tissue which may seriously interfere with the efficiency of the heart" (Boyd). The scar is always smaller than the actual infarct and consists of a very collagenous fibrous tissue which includes a certain amount of elastic fibers. At the margin of the scar tissue, brown pigment giving a strong iron reaction is derived from the blood pigment deposited in the heart muscle by the hemorrhages into the infarcted area. Calcium can be found in many large scars and sometimes the Sudan stain will reveal a considerable amount of fat. The microscopic evidence of coronary occlusion is rather typical, and the diagnosis of this condition can be made even though the occluded vessels cannot be found at autopsy. Other conditions which can produce a similar picture, syphilis and circumscribed focal myocarditis, are so rare in comparison to coronary arteriosclerosis that they need not be seriously considered. The pericardium as well as the endocardium, if involved in the infarction, will show the same histologic picture that is present in the myocardium with the formation of pericarditic adhesions, fibrosis of the endocardium, or the formation of a partly organized mural thrombus.

The possibility of estimating the age of the infarcts by histopathologic study is limited. It is sometimes equally difficult to decide whether an infarction of the myocardium was directly responsible for the death of the individual. Restitution of the infarcted area will be impossible and the loss of muscle tissue will be permanent, since probably no regeneration of myo-

cardial cells occurs. However, there will be a hypertrophy of the heart muscle fibers surrounding the necrotic area either due to a true compensatory phenomenon or to hypertrophy caused by the active hyperemia prevailing during the organization of the infarct. This partial and irregular hypertrophy of the heart muscle may not be grossly noticeable and may not increase the weight of the heart. It should not be confused with the myocardial changes of hypertensive heart disease which is very often combined with coronary diseases of the heart.

SUMMARY

1. In 5213 consecutive autopsies at the Charity Hospital of Louisiana at New Orleans, 749 cases of fatal organic heart disease were encountered. In 165 cases (22 per cent), evidence of arteriosclerotic heart disease was found at the autopsy. In 41 cases (5.4 per cent) death was due to coronary occlusion.

2. The essential gross pathologic findings in a heart with coronary disease are infarction and fibrosis of the myocardium with the formation of a heart aneurysm and leading to chronic congestive heart failure.

3. Microscopically, when a narrowing of the lumen of the vessel has occurred, degenerative changes prevail, but in instances of complete arterial obstruction, necrosis of the myocardium can be observed. In patients surviving the acute attack of infarction, organization of the necrotic area leads to the formation of a myocardial scar with regional hypertrophy of the surrounding heart muscle fibers.

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ON THE OCCASION OF THE NAMING OF THE RUDOLPH MATAS MEDICAL LIBRARY*

ADDRESS

CHARLES C. BASS, M. D.
NEW ORLEANS

Records of medical knowledge, medical literature, have been accumulating for thousands of years. During much of this period, decadence of civilizations was usually accompanied by almost complete disappearance of all record of the medical knowledge of the time. It is only during the past four hundred years that the writings of the master minds in medicine have survived the ravages of time or the wanton destruction of conquerors and the devitalizing effect upon civilizations, of wars, disease and pestilence.

How different now. A new discovery today is recorded within the space of a few hours, days or weeks, according to its nature and importance, in the medical literature of every land. There is no chance for it ever to be entirely lost to civilization, except for the civilization itself, of the entire world, to disappear.

Up to about sixty years ago, the medical literature consisted chiefly of books of one kind or another, together with older forms of printed or still older frail and fragile written records, incunabula, manuscripts, tablets. During this later period of rapid advances in medical knowledge, books—textbooks, monographs, treatises and systems—have appeared in greater and greater numbers and volume until now the medical library must count such books in the thousands and the tens of thousands. Medical progress is so rapid these days that most of such books are already out of date before they are off the press. New editions are brought out in rapid succession, with the idea of keeping them up to date. But, many of these are

*Exercises held November 29, 1937 in the Hutchinson Memorial Building, New Orleans.

little more than repetitions of the errors, misinterpretations and distortions contained in former editions.

The medical library furnishes the most complete, if not the only possible, record of the experiences of the medical profession, and the textbooks are abstracts of this experience. Unfortunately, these abstracts are incomplete and are colored by the idiosyncrasies and mental attitudes of the authors or editors. Consultation of several textbooks on the same subject helps one to avoid the danger of being misled as much as he would be if he consulted only one. But all too often one textbook after another has copied and passed on the erroneous ideas and misinterpretations placed upon the original observations by former compilers. Consultation of the original material, as found only in the medical library, is the only way by which one can orient the cyclopedic and the textbook view and reduce his horizon to the proper perspective.

Great change has occurred in the form and other characters of medical literature during the past one hundred years; most of it during the past fifty years. As medical knowledge has progressed, there has been a successive splitting off, from both pre-clinical and clinical departments, of new branches or groups, many of which have attained sufficient strength, importance and dignity to be recognized as special fields. They have come to have their own societies, separate journals of publication and, in some instances, a scientific lingo of their own. The number of medical periodicals, both general and special, has been growing by leaps and bounds until there is now a total of several thousand in the many languages of the world.

Records of the past, such as may be supplied in books, are of inestimable value, but a medical library must also be a contemporary and a periodical library. The present is even more valuable than the past. If we were suddenly deprived of the knowledge acquired during the last fifty, twenty-five or even ten years, what a difference it would make in the medicine of today.

This kind of living, active, rapidly increasing knowledge is ephemeral; its seeds germinate in new discoveries the next day after they are planted. The periodical literature—the weekly,

the monthly and the other less frequently appearing periodicals—record and supply this knowledge as it is discovered. To be sure, there is a great amount of chaff and trash in this enormous volume of periodical literature, but it is for the student to learn cautiously, carefully and with an open mind, to pick out the grains of truth from the mass and make practical application of them to his problems. One who learns to do this profits in untold measure. One who blindly accepts it all or rejects it all, might as well never read. He is hopeless in any case.

Medical periodicals must be bound and kept in order for easy access. The usefulness of a general medical library is determined, in large measure, not only by the number of current periodicals, but also by the completeness of the files of these publications and their accessibility. The shelves of the reading rooms must carry bound volumes of the periodicals of the last few years. Previous volumes, from the first number, if possible, should be within easy access in the stack rooms.

The current periodical medical literature has now become so numerous and so voluminous, until it could hardly be used, if it were not for another library facility that has been developed and brought to a high state of perfection contemporaneously, the medical index. The completion of the first series, through the alphabet, of the Index Catalogue of the Surgeon General's Library in Washington, under the able guidance of John Shaw Billings, constituted one of the greatest and most far-reaching contributions to medicine that it is ever the lot of any man to make. Not only the wealth of references in this first series but that in those which have followed, have provided the medical research worker with a most extensive and comprehensive reference index to the medical literature of the world. It is limited in its usefulness, however, for some purposes, by the system of rotation, over a period of years, through the letters of the alphabet, resulting in long delay in the publication of some of the titles.

The Quarterly Cumulative Index Medicus, first started in 1879, as the Index Medicus, and in 1916 as the Quarterly Cumulative Index, the two being combined in 1927 under the present title, has been brought to a high state of per-

fection and simplicity, and now provides a ready, up-to-the-minute index of current medical literature that is sufficiently extensive to meet most needs. With this index and access to a good medical library, looking up the recent literature on a given subject is so easy that it may be called a "lazy man's job". It is all right there, in convenient form and order, for the asking and the reading.

But this "lazy man's job" has become more of a real job again during the past decade or a little longer, despite the Quarterly Index, because so many of the discoveries and advances in medicine have come through other related fields of science, the literature of which is covered only partially or in special instances by the medical index. Medicine is rapidly becoming more dependent upon, and more closely related to, the other sciences of biology, chemistry, physics, psychology and sociology. And these all have literatures of their own, with much of which the medical profession must now keep in touch.

The medical library is an essential part of the educational features of every community, the medical culture of which it determines, to a large extent. It contains the record of the efforts, ideas, hopes and fears of all medical men in the world and is a powerful engine of medical education and culture. A good medical library helps to elevate the standards of the medical profession, to improve medical practice, to enrich the teaching of medical students, to promote research and discovery, and through all these, contributes to the health-welfare of the community as a whole.

Diligent and intelligent use of the library promotes medical modesty, caution, close observation, accurate notation and a critical judgment of our senses. The best protection against avoidable mistakes, waste and duplication of effort is knowledge of what others have discovered and this is to be found only in the literature in the library. Familiarity with the past tends to induce a becoming and amiable modesty in medical men of the present.

Methods of medical education have changed greatly during the past three decades, largely as a result of the rapid advances in medical knowledge and the growth and organization of medical literature in the library. Within the

memory of many of us here, the course in the medical school consisted chiefly of lectures by the professors, who presumed to present, in these lectures, all that the student needed to learn in the particular department. Too often these lectures were taken almost completely, and sometimes verbatim, from some standard textbook which the student could have read just as well, at his leisure, if he had been taught to do so. Now the didactic lecture is allotted only a small place in the medical curriculum.

The dissecting room was the only laboratory in which the student did any real worthwhile laboratory work. Now laboratory training and experience is an important part of the course in nearly every department.

Bedside instruction was limited. Now the student spends much of his time in contact with, and particularly in the actual care of, patients in the hospital and clinic.

The library contained only a meager collection of books and publications. Students hardly knew where the library was, much less how to use it. Now the student spends much of his time in the library, where he has access to a great wealth of literature in many different fields of medicine. He not only knows where it is but he knows how to use it.

Lewellys Barker once well said "Education of a student in the use of the medical literature is far more important than supplying him with large amounts of information derived from that literature." The best way to educate the student in the use of the literature is through practical experience in the library, the only place where the literature is to be found.

Without the library facilities here, how different medical education, medical research and medical practice in New Orleans would be. Here in one repository, in comfortable quarters, under an able, efficient and willing staff, are more than 50,000 books and bound volumes and more than 500 current medical periodicals, at the beck and call of every medical student and every medical man or woman who wishes to use them. Here the physician or student can present his questions on any subject to the authorities of the world, past and present, and receive back their answers as quickly as he can read them.

The best remedy for the "blues" and the

best way to forget discouragement about the progress of medicine, that I know, is to peep into the reading rooms of the library, as I have done often, and see twenty-five, fifty and more students, teachers and physicians of the community there working and storing up in their own minds and souls the knowledge and thoughts so bountifully gathered there for them; or to arrive early on a Monday morning and see on the receiving tables, the loads of books and material which were taken out for use over the week-end. It gives me a real thrill and a boost of spirits every time I see it.

HISTORY OF LIBRARY

What of the history of the development of this important institution which we now designate the Rudolph Matas Medical Library? I can give here only some of the high points and general information. It remains for others who are better informed and who have the ability to do so, to present a more complete and detailed record.

As far back as 1843 there were in the medical school building of the University of Louisiana, which later (in 1884) became the Tulane University of Louisiana, two small rooms for a library and reading room.

When the University started operation again in 1866, after a brief suspension during the Civil War, a few scattered old books, uncatalogued and unindexed, were assembled in a reading room which was established for students and professors in the east wing of the medical building.

The new building for the medical school, the Richardson Memorial, on Canal street, was completed in 1893. In it, for the first time, was provision made for the long needed space for the medical library.

In the summer of 1896, Dean Chaillé, with the assistance of his secretary, Mr. Oswald Belfield, and John A. Bacon, undertook the first organization and systematic arranging of the miscellaneous material at hand. This consisted mostly of books donated by members of the faculty or others and some old atlases that had been handed down from long years before. It is likely that some of this material was purchased out of the special appropriation of the state legislature of \$25,000 in 1850 and \$6,000 more

in 1853, for the purchase of material for a museum. In 1903, \$2,000 was spent by the University for books and improvements in the library. Many of the old books in the present large collection still bear the original old labels in the handwriting either of Dr. Chaillé or of Mr. Belfield, whose writing only an expert could tell from Dr. Chaillé's.

After the chaotic material had been assembled, shelved and arranged in the library room in 1896, under the direction of Dr. Chaillé, a student was employed, during the sessions, to keep it open from 3 to 5 o'clock. This was continued until in 1906, when Miss Jane Grey Rogers was appointed as Librarian and went faithfully and tirelessly at the task of cataloguing and indexing, according to medical library usage, the mass of medical literature representing the haphazard accumulation of some sixty years. She supervised, unaided, its use and circulation to students and faculty until 1926, when an assistant (Mrs. Lucille S. Brown) was provided.

In 1920, the domicile and library of the Orleans Parish Medical Society was moved to the Medical School building, then the Hutchinson Memorial and that same year Miss Mary Louise Marshall was employed by the Society as Assistant Librarian on a full time basis.

In 1928, an agreement was made between the School and the Society for the technical administration of the two libraries jointly. Miss Marshall was appointed also as Librarian of the Tulane Medical Library, thus making her acting head of both, which position she still occupies. All credit should go to her and her staff of able assistants for the present splendid organization of the large amount of library material under their care and the efficient and courteous manner in which they facilitate its use.

When the new Hutchinson Memorial was erected in 1930, space was provided for the domicile of the Orleans Parish Medical Society and the State Medical Society, the organized medical profession of the community, on the first floor, and for care of the Society's library, jointly with our own, on the second floor, with a view to a continuation of the joint technical administration which, to this date, has been most satisfactory and beneficial to all concerned. If

anybody should ever undertake to break up this cooperative pooling of the medical library resources of this community, he will be so severely condemned by his own conscience that he will surely have to desist from such an attack upon the best interests of the entire medical profession.

The number of bound volumes in the library, which will be known hereafter as the Rudolph Matas Medical Library, has grown from about 3,000 in 1900 to 30,168 on November 1, 1937. In addition, 350 current periodicals are received.

There are several special collections among which should be mentioned the Feingold Collection on the eye and its diseases, which is invaluable, not only to students but also to specialists in that field, some of whom come from far and wide for research and study; the Kells Collection on dentistry, which is more useful to members of the dental profession and of the medical profession in their closely related problems; the Lemann Collection on diabetes, established in honor of the late Dr. I. I. Lemann, a pioneer in the study of that disease and a leader in the broad field of internal medicine. He served as Chairman of the Library Committee for several years. His love and devotion to medical education and medical culture, his scholarly attainments and his active participation in the affairs of the University enabled him to appreciate, more than most others, the great value of the medical library and the need for the promotion of its usefulness.

Tonight's occasion is an important event in the medical history of this community and I wish to record the fact, here and now, that the idea of naming the Library after Dr. Matas, originated in the mind of Dr. Lemann. Quite so, the rest of us,—members of the Faculty, the Dean, the President and the Board of Administrators,—unanimously endorsed and promoted its accomplishment; but Dr. Lemann originated it. Let the credit be placed where the credit belongs.

As Dr. Lemann foresaw, the labeling of every volume with the name of the distinguished master, will not only honor him in our all-too-feeble way, but it will greatly enhance the educational, cultural and practical value of the li-

brary. Every reader, whether undergraduate student or physician, will have this star always before him to encourage him on to greater effort and higher attainment.

Dr. Lemann's deep interest in the medical library is further exemplified by the fact that his large and valuable private collection has already been transferred here, in accordance with his wishes, to be placed to the best possible use.

The Maurice Stern Fund for Medical Literature, established in 1924, deserves special mention. The income from this fund of \$12,000 is devoted to acquisition, through purchase or subscription, of new material and has greatly aided the much-needed expansion of the list of journals.

Within the limitations of available funds, the annual budget of the School of Medicine has provided for purchase of books, continuation of subscriptions, binding and for filling in gaps in the files. But there always has been need for much more than could be spared from this source.

The volume and usefulness of the library has been greatly increased by generous donations of books, journals and other material, from members of the faculty, alumni, other physicians and the families of deceased physicians. But the largest donor of valuable material of this kind has been Dr. Matas. For years he has been passing on to this library hundreds and hundreds of volumes from his own private collection. Many have been purchased for the library out of his own pocket and placed there directly. Not only has he been a contributor but he has been a collector for the library and it has been through his efforts and influence that much other valuable material has been secured.

Not only has he contributed so largely of books and publications but he has been keenly interested in medicine in art and has collected or promoted the collection of enough material of this nature already to crowd the museum room in the library. There are many old prints and medical caricatures. The library now has over 1,500 mounted portraits of physicians, largely through his interest.

But all of these contributions from Dr. Matas, which go a long way to make this library what it is, are no more important than

the influence of the example he has set as teacher, consultant, author and research worker, of appreciation and use of the library.

The very building in which the library is located would not be here, had it not been for the influence of Dr. Matas. The Hutchinson Fund was established as a result of the confidence placed by Mr. Alexander Hutchinson in his advice and counsel, and it was because we had the Hutchinson Fund and had shown the ability to make proper use of it in our education program, that the General Education Board consented to give us the money for the present building.

This is the Rudolph Matas Medical Library. It always *has been* the Rudolph Matas Medical Library. We are now only formally and more permanently recording this long-recognized and well-known fact. In this, as in a thousand other ways, the name and the influence of our own Dr. Matas, one of the foremost men in medicine in modern times, redounds to the everlasting benefit of the community of New Orleans, of the community of Louisiana, of the community of the Southland, of the community of America, of the community of the whole world.

REMARKS

RUFUS C. HARRIS

NEW ORLEANS

It is a very happy occasion to us to dedicate the Medical School Library of Tulane to Dr. Rudolph Matas. It is our hope that the Library will be able to administer to the ever-increasing needs of students, faculty and practicing physicians as Dr. Matas has done throughout a long and active life of great service to this institution. He has been its leader and an ever-serving example of the highest ideal of the medical profession.

In naming the library this evening, I think it is interesting to note that Dr. Matas has studied and contributed in such diverse fields, and his knowledge of medical literature is so great that often it has been said that his colleagues have felt that by consulting him they

could extract more information from his encyclopedic mind than they could obtain from a visit to a library. That opportunity is not open to as many as would wish it, however, and so here we shall attempt to combine the two—the knowledge stored in this library, and the great spirit of learning evidenced and encouraged by Dr. Matas. There is no person more fit to lend his name to this library, and there is no other person to whom this library could look so well. Dr. Matas has carried his great medical learning in the grand manner. Not only in the technical skill of his profession but by his fine qualities of character and his unswerving devotion in medicine to the vision of high calling has he made for himself the name we give our library. He has been called the great high priest of surgical and medical ethics.

There has always been in our hearts a great love for him, a sincere devotion to him personally for his lovable characteristics, and a fond pride in his great work and achievements. The school that laid open to him the sources of knowledge has been so amply repaid for her efforts by her pride in him, that we have wished to do something to indicate to him in a small way that devotion and admiration and love we have for him. It is so difficult for an institution to show a person what an individual can express more easily. There are persons who indeed are the heart and arteries of an institution, but their acts are known only to the other members of the body and are clothed in anonymity to the public. We can only acknowledge them in death. Closely associated in my mind with this event is another such man, my dear friend and the friend of the medical school, Dr. I. I. Lemann. Dr. Lemann was a great admirer of Dr. Matas, and was among the first to suggest the dedication of this library to him. He went with me to call on Dr. Matas to ask him to accept this evidence of our esteem for him. He would have been so happy to be here tonight quietly to help honor him. Living the daily life makes so many demands upon us that sometimes we remember only a few of the things that we should never forget. There is no finer quality of character than gratitude. And here tonight may I solemnly declare that it is my hope that never may one have cause

fairly to assert that this institution is unmindful or forgets the love of its friends. I hope it may be understood that an occasion such as this is an effort of ours to indicate our affection and esteem to one who has been such a friend and who has meant so much to us at Tulane as well as to the medical world.

I am deeply happy that the great name of Dr. Rudolph Matas, even now while he lives, may lend itself to this library. It is my wish that he may always know that the great work he has done during his lifetime will be assisted in continuance by the splendid library repositories, one of which will bear his name.

And now upon the recommendation of the Faculty of the Tulane School of Medicine and the approval of the Board of Administrators, I hereby declare that, by virtue of the authority vested in me as President of Tulane University, this library is named the Rudolph Matas Library of the School of Medicine of Tulane University.

RESPONSE

RUDOLPH MATAS, M. D.

NEW ORLEANS

Mr. President, Ladies and Gentlemen:

After hearing the remarks of our honored President, and the marvelous eulogy of my dear friend and Dean, Dr. Bass, I recall an episode in our local history which may be apropos of this situation. It is the story of a prominent politician, highly esteemed for his unswerving loyalty to his party, who was reported critically ill in one of the neighboring parishes. A friend and editor of the local paper, believing in preparedness, wrote a long obituary—a veritable hymn of praise—which he kept in reserve for immediate use should the occasion arise. Suddenly, one night, the report reached the editorial sanctum that the great man had died. Instantly, the machinery of the press was set in motion and the community was startled by an extra edition framed in mourning bands and printed in glaring headlines which proclaimed to the people the immeasurable loss that the community had sustained. The next day, the editor received the following note: "Dear Jim:

That was a wonderful obituary of yours. I had no idea that my death meant such a terrible loss to the party and to the people, but your editorial has come to me like a trumpet call to rouse me from the grave and make me feel that I must get back on my feet, if only to prove that all you have said of me is true. Yours gratefully, Jack."

* * *

I realize that in the present situation, I should be really silent, as becomes one who has an epitaph inscribed over him and who can only speak to posterity through the voice of his friends and contemporaries.

Fortunately for my voice I am not in the category of the illustrious dead and I am still able to imitate that famous Danish surgeon of Chicago, Christian Fenger, who, when approached, at 70, by a committee with the plans for a monument to be erected in his honor, exclaimed: "What! A memorial? Why I am not dead yet! You have not even given me a chance to deserve it!"

Now let me say at the outset that, while I am deeply sensitive to your praise and appreciate fully the generous motive that has prompted the Administrators and the Faculty of my Alma Mater, to distinguish me with this testimonial of their esteem, I must confess that, at my age, I am shy of dedications and eulogies which have such a close resemblance to memorials. They seem to challenge my longevity and embarrass me with the weight of their epitaphy.

If you had dedicated this library to the memory of one of the erudite bibliophiles of our profession who have given luster to the medical literature of Louisiana, such as a Benet Dowler, a Cartwright, a Barton, a Chaille or a Joseph Jones, or some other great book lover of your choice, you would have made my task much easier, as I would have been able to join you in the chorus of praise.

Personally, I can safely say that I have arrived at that age when vanity and the fugitive ambitions of the flesh cannot influence my actions or thrill me with the conceit of overweening ambitions. I am reminded that I cannot take with me the medals, titles or honors, which I now prize so dearly, on that last journey where no one is allowed to take with him anything more than his naked worth. But

I would be untrue to myself and to the sentiments of loyalty that inspire our most laudable conduct were I to pretend indifference to the manifestations of approval from those whom I honor and respect, and who have sweetened my life with tokens of their affection, and have filled my heart with ebullitions of gratitude.

I am indeed happy in the thought that I may have accomplished something in the course of my existence that my associates and contemporaries deem worthy of commendation or remembrance, or anything in fact, no matter how little, that may have added to the good name and prosperity of the institution which gave me my professional birth; or contributed to the welfare and happiness of the community with which my own contentment and prosperity are so inseparably blended.

There is much that I could say regarding my now historic relations with this library which, since its birth, I have looked upon with a paternal solicitude almost as if it were my own child. But Dr. Bass has said so much and so generously in this connection that it would be worse than superfluous to add to his remarks. There is much, however, that I could say of my personal experiences with the personnel of the library, and of the debt of gratitude that I owe to those who have nursed it into existence; something to tell of the fidelity and devotion of the first Librarian, Miss Jane Grey Rogers, of blessed memory; something again in praise of the achievements of the present librarian, Miss Marshall, whose administrative genius, so admirably displayed in her dual functions as Librarian of the joint University and Parish libraries, has made of the efficient and harmonious union of these two collections the greatest single factor in the rapid rise of medical culture and bibliographic research in our community.

I would like to speak also of the Library Committee and especially of our late associate and lamented friend, the Chairman, Dr. I. I. Lemmann, whose name we cannot mention without recalling his splendid personality, his intellectual gifts, his remarkable clearness of judgment and absolute fairness as a presiding officer, and his deep and abiding interest in the welfare of the library, which he testified by his constant

solicitude for its greater merit and usefulness. This and much more I could say, but I am reminded that I have said quite enough for a resurrected ghost. Besides, there is another function to be fulfilled. For, as the program indicates, the guests who have graced this occasion with their presence, are invited to visit the library and inspect its treasures, if only to verify by their own testimony that the Board of Administrators of the Tulane University has given my name to something that is not ghostly or purely ethereal, but to a living, palpitating reality that is possessed of the gifts of an infinite eternity.

THE USE OF LIPIODOL IN CERTAIN ORTHOPEDIC AFFECTIONS*

GEORGE C. BATTALORA, M. D.

NEW ORLEANS

In 1920, Sicard and Forestier were making a radiographic study of the epidural space by means of lipiodol injections, when their attention was called to the fact that in some patients suffering from lumbar pains the pain was relieved. The injections were repeated at the request of their patients, with still further alleviation of the pain. Since then these men have used the drug in numerous other conditions and have worked out a specific technic for its use. This was described by Forestier in an article read before the Southern Medical Association in 1934.

That the injections are free from any injurious effects has been testified to by numerous observers. Abscesses do not occur, and it is only in an extremely rare case that symptoms of iodism will occur, two cases in several thousands of injections (Forestier). The failure of development of toxic symptoms is undoubtedly due to the very slow rate of absorption of the drug. Roentgen ray evidence of the presence of the drug can be seen even one year after injection.

The mode of action of the drug is not clear. Several theories have been advanced as to this action. Some contend that the presence of the

*Read before the Louisiana State Medical Society, Monroe, April 28, 1937.

drug in the deep tissues induces a polymorphonuclear leukocytic infiltration, and that it is the phagocytic action of these cells that causes the improvement. Others claim that it is the stretching action of the injected material that gives the beneficial results, analogous to the stretching and breaking up of adhesions by petrissage, where the tissues are kneaded and roughly handled.

Coste believes that the disruption of the tissues caused by the injection results in the formation of new blood channels to the part, and this is the cause of the improvement. In the discussion of Coste's article, Fiessenger contends that there is an influx of polymorphonuclear leukocytes with the formation of innumerable minute abscesses about the droplets of oil. This is not probable, as the spread of the oil in the deep tissues would not be nearly as rapid as it is.

It is probable that several factors are at work, and in addition, that the oil has a definite local anesthetic action. On account of its prolonged stay in the tissues this action is present for a long period of time. The drug spreads from the site of injection along the tissue planes to a far-removed point. This spread begins very early, within a week after injection. In one patient injected about the shoulder, the oil was noted on roentgen ray examination in the region of the elbow six weeks later.

TECHNIC

The injections are made with a small syringe having a wide flange so that great pressure can be exerted to expel the oil. The needle used should not be larger than 19 gauge. If a larger needle is used it unnecessarily traumatizes the tissues, and quite a quantity of the oil may run out of the puncture site after withdrawal of the needle. A preliminary injection of novocain is given and then the lipiodol is injected. The oil should be warmed slightly above body temperature, otherwise the expulsion of the oil from the syringe will be quite difficult on account of its great viscosity.

METHOD OF TREATMENT IN ORTHOPEDIC CONDITIONS

This method of treatment has been used for quite a number of years by European physicians, particularly the French, but I have failed

to find any reference to its use in this country except in an article read before this society by Oscar J. Bienvenu in 1935. In his paper he referred to the hypodermic use of the drug, but dwelled, however, on its use as an antiseptic in deep-seated infections with chronic draining sinuses. Several cases of osteomyelitis with draining sinuses that were healed by this method were presented. In the present paper I will dwell essentially on the use of lipiodol as a deep-seated injection in certain orthopedic conditions.

SHOULDERS AND NECK

The various conditions in which lipiodol injections may prove advantageous will be dealt with by regions, beginning with the shoulder and neck. In this region, cervico-brachial neuritis, periarthrititis of the shoulder-joint, and subdeltoid arthrititis are the conditions most amenable to this form of treatment. In cervico-brachial neuritis, paravertebral injections are made into two or three interspaces to include the nerve trunks involved, 2 c.c. of lipiodol is injected into each space.

In periarthrititis of the shoulder-joint, where no specific diagnosis can be made, the upper end of the humerus is encircled with the oil by means of multiple punctures. The injections are made against the bone, at the site of insertion of the capsular ligaments. Care must be exercised not to inject the drug into the joint. In this condition the results are not nearly as well borne out as in treating the knee-joint.

In subdeltoid bursitis, the injection of 2 c.c. of lipiodol is made into the bursal sac. The pain is at first increased and then begins to subside. Motion of the shoulder-joint, particularly in abduction, should be encouraged as the pain subsides. Repetition of the injection may be necessary; as a rule, two injections suffice. I have used this method in one acute case, and the result was spectacular. Prior to the injection palliative measures were used, and it was necessary to use morphine to control pain. On the day following injection, the patient was able to return to his work as a mechanic, and no further sedative medication was necessary. Whether this improvement was due to the lipiodol injection, or simply to the puncture of the bursal sac, is problematic.

At the elbow, the injections are recommended for tennis elbow, and for localized types of neuritis.

SPINAL REGION

In the spinal region, three types of injections may be used. In myositis, multiple injections into the involved muscle are recommended. In nerve root irritation, such as results from hypertrophic spondylitis, injections are made into the intervertebral foramina (Fildermann). In this method, one or two interspaces are attacked at a sitting, and several injections are made. The needle is introduced about two inches lateral to a spinous process, and carried down to the transverse process. It is then deviated upward to pass above the process and advanced about two centimeters. One to 2 c.c. of lipiodol is injected at each interspace. In this type of back pain it is extremely important that definite localization of the point of irritation be mapped out. Fildermann reported a case of a woman who had an old spinal injury, with a Kummell's kyphosis resulting, in whom complete relief of pain was obtained by these injections. Of course, in such a condition, it is not sufficient to stop treatment when pain is relieved, but measures must be adopted to prevent further damage.

The third type of injection in this region is the high epidural injection. This is done for intractable lumbar pain. The technic is similar to that used for inducing epidural analgesia.

At the lumbo-sacral region, injections are made for chronic sacro-iliac pain, and in lumbo-sacral strain, where a definite tender point can be mapped out. A low epidural injection here is also advantageous.

LESIONS IN LOWER EXTREMITIES

In sciatic pain, not the result of visceral disturbances, this method can bring marked relief to the patient. The injections are made into the nerve trunk, if this is tender on pressure, and multiple punctures will be necessary. In sciatic pain, where the nerve is not tender, a low epidural injection gives the maximum of relief. The injection is done under local analgesia, and 8 to 10 c.c. of lipiodol is injected into the sacral canal via the sacrococcygeal hiatus. The patient then lies on the affected side for two hours. The relief of pain is marked the fol-

lowing day, but soon returns. Two or three subsequent injections are necessary, and the results will vary from complete relief of pain to marked relief. I have found his method much more advantageous than using large quantities of saline as an epidural injection, because it can be done painlessly, and the patient is immediately ambulatory.

At the knee joint, Forestier is quite enthusiastic about periarticular injections in cases of hypertrophic arthritis. In this condition, multiple injections are made about the joint at the level of the capsular attachments, and into the periarticular tissues. Relief of pain endures from six months to one year. This method is based on the findings of Leriche and Policard that joint pain arises from capsular attachments and in the periarticular tissues, never from the intra-articular cartilage, as this is devoid of nerve fibers. Care must be exerted in making these injections that the joint cavity is not entered.

Intra-articular injections are recommended by Forestier only in cases of recurrent hydroarthrosis and in Charcot's arthropathy. The quantity injected in the former condition should be limited to 0.5 to 1.0 c.c., but in the latter condition, much larger quantities may be used. In the Charcot's joint the injections are repeated, and usually result in a diminution in the joint effusion with less tendency for dislocation to occur.

All French authors call attention to the irritating properties of lipiodol when injected into a joint. However, in 1930, Kreuscher and Kelikian reported their method of using lipiodol and iodipin in visualizing the knee and hip joints. Clinically, beneficial results were derived, consisting in freedom of action of the joint and relief of pain.

In the foot, the drug may be used in treating calcaneal osteoperiostitis, Morton's metatarsalgia and hallux valgus cases with pain. In the cases of hallux with pain, the injections are made at the attachments of the capsular ligaments. In anterior metatarsalgia, the painful area is carefully mapped out and the injection is made directly into it.

With regard to painful calcaneal spurs, it is my belief that this is the method of choice in

treating this condition. Under local analgesia, using 1 per cent novocain, a needle is introduced into the region of the spur. The injection should be made either from the internal or external aspect of the heel, and not from below. Two c.c. of lipiodol is then injected against the bone. The injection is not made at one point, but along the ridge of bone constituting the spur. On withdrawal of the needle the part is massaged for a few minutes, and the patient is allowed immediately to walk on the foot. The following day, pain may be quite marked, and the patient be unable to walk about. However, directly after this the pain begins to lessen, and in the average case, at the end of one week the patient is quite comfortable. It is exceptional that a second injection is necessary. If this method is employed, very few operative excisions of the spur will be necessary. Following the relief of pain, the necessary corrections are made in the shoe of the patient, as the painful spur is the result of some infection, plus chronic trauma.

SUMMARY

It is again reiterated that in most of the conditions described, the relief of pain by lipiodol injections does not constitute the entire treatment of the respective disorders. However, this freedom from pain gives the physician a chance to employ other methods much more satisfactorily than otherwise.

CONCLUSIONS

1. Lipiodol is a safe drug to use as a hypodermatic injection.
2. It has remarkable pain-relieving qualities in certain conditions.
3. The manner of its action is not well understood.
4. Treatment of certain conditions is greatly facilitated by the use of lipiodol injections.
5. It is the treatment of choice in painful calcaneal spurs.

DISCUSSION

Dr. E. D. Fenner (New Orleans): I regret that I have not had a larger personal experience with the application of lipiodol in the conditions Dr. Battalora spoke of, but think it a very promising method. I have used it in a number of cases, but I have not been able to follow some of them as I

would like to. Recently, I had a patient who had received a blow on the side of the chest and ever since had been suffering with pain localized in the costal area. I made an injection of novocain in that region and relief resulted for several days. Then the symptoms came back and I gave lipiodol in the same region, infiltrating the tender spot and trying to reach the costal nerve. He did not complain, but I have not seen him since.

I had another case, subdeltoid bursitis, and in this patient I made an injection of 2 c.c. of lipiodol. He had been suffering considerably. He made free use of his arm and following the injection he disappeared, although he did not seem to be having any particular pain.

I have used it in a few cases of calcaneitis, which is generally associated with spur formation, and there, I agree with Dr. Battalora, it offers promising results. The most inexcusable operation in surgery is the removal of calcaneal spurs. There are hundreds and hundreds with spur formation who never had a pain. I do not believe the spur is responsible for the pain and removal does not help, except that it gives rest. Lipiodol produces the action of iodine with resultant effect and is in many cases followed by relief of troublesome symptoms. Iodine is the only relief we have in these cases. Iodides will relieve these cases in six to ten weeks, but that is a terribly long time to spend, whereas with lipiodol we get relief much more promptly.

I wish I had had the courage to inject lipiodol into the joints. I would not be afraid of the iodine, but would be afraid of what would become of the oil. I suppose many of us have used tincture of iodine in cases of chronic hydrops and certainly had beneficial results in that condition. I have never injected lipiodol into the joint. I do not say that it would not be safe, but I have not tried it yet. In the shoulder it ought to be of service, but here anything may relieve subdeltoid bursitis. Jones believed that elevation of the arm will frequently relieve it. A large puncture with the exploring needle may give relief. We all know that the so-called calcareous deposits in subdeltoid bursitis may disappear over night, and whether the lipiodol has any other effect than in opening up the bursa, I do not know, but I believe it should be used.

I hope to be able to continue the use of this remedy in these cases. I tried it in a case of sacro-iliac and arthritic pain. In one patient I injected the sciatic nerve. The man did not have any particular pain, but some soreness for a few days. He did not develop paralytic symptoms and was considerably relieved, but then I have not had the opportunity to see him for some time and do not know the ultimate result. I tried it in one case of sacro-iliac pain, injecting the deep muscles. I

recall an expression of opinion by Dr. Painter of Boston, who told me a good many years ago he considered that most of the sacro-iliac pains were in the gluteal muscles. So I tried it in one case and got some relief, but certainly no definite cure of the patient. I feel that often this thing injected into the intervertebral foramen, as described by Dr. Battalora, would relieve these terrible cases we call for lack of better name "sciatic scoliosis," where the patient stands like this (illustrating) with the hip in which the pain is, prominent. If it would relieve these cases which are so difficult to deal with, we would have reason to be extremely grateful.

Dr. Guy Caldwell (Shreveport): I have not used lipiodol in painful joints or periarthritic conditions, but it is perhaps better than the simple infusion of saline or various other solutions I have tried in these and similar conditions. Lipiodol is certainly slower of absorption, and for the most part, non-irritating. I doubt very much the wisdom of putting it into joints, and Dr. Battalora has definitely suggested that we not introduce it into joint cavities.

Anything that will help the pain in these various regions is worth while. I think we should always remember, however, that these injections should supplement other treatment. We should not look upon it as the entire treatment, but should take steps to relieve pressure, or strain, and remove infectious foci.

Dr. Scott Hamilton (Monroe): I had one patient in whom I used lipiodol and the result was so spectacular, that I feel moved to report it. The patient was an elderly Italian woman, who had been used to doing her own work all her life. Rather suddenly, one month before consulting me, she felt an intense pain running down the right arm. Examination showed nothing more than an extremity that was somewhat colder than the other. I made a diagnosis of stellate ganglionitis, and injected the ganglion first with 2 c.c. of procain followed by 2 c.c. of lipiodol.

Fifteen minutes after the injection she moved her arm, free from pain; the temperature was the same as in the other arm. She resumed her work the next day. She reported at six months with no recurrence of pain.

I do not expect to get results like that with the majority of cases in which I use lipiodol, or lipiodol in conjunction with procain injections. At least the treatment offers an addition to our armamentarium which has proved to be of great value.

A CASE OF CYSTIC DISEASE OF THE PANCREAS WITH APPARENT DISAPPEARANCE OF DIABETES FOLLOWING OPERATION

W. A. SODEMAN, M. D.*

NEW ORLEANS

In severe diabetes mellitus the return of glucose tolerance to such an extent that hyperglycemia and glycosuria do not appear on unlimited intake of carbohydrate is unusual^{1,2}. I wish to report the following case not only because it demonstrates this unusual occurrence but also because of the extraordinary circumstances under which the tolerance was changed, because of the interesting pathologic changes in the pancreas, and to re-emphasize the importance of diagnosis of correctable pancreatic disease. Furthermore, in a search of the literature, although necessarily incomplete, I could find no similar case.

CASE REPORT

E. J. (No. 39564), a colored female, aged 30, entered the Medical Service of the Charity Hospital, complaining of numbness of the hands and feet. Two months prior to admission she began to notice ease of fatigue and loss of weight. A month later vague pains developed in the right lower quadrant. Thirst became more marked and with it polyuria appeared. She was continually hungry. With the development of numbness of the hands and feet, she applied for admission to the hospital. In the past her health had been generally good. On one occasion, seven years ago, she was treated for menorrhagia. Her urine contained no sugar at that time. Family history revealed no diabetes.

Examination on admission revealed a poorly nourished colored female of 30 years of age lying quietly in bed. She was semi-comatose and obviously dehydrated. The temperature was 98° and pulse 96. The respirations were 29 per minute, deep, and of the Kussmaul type. Blood pressure was 115/75. The height was 69 inches and weight 90 pounds. The eyeballs felt soft. The lips were slightly cyanosed. The chest was symmetrical. The heart and lungs were not remarkable. The abdominal wall was not rigid but there was diffuse tenderness; the liver and spleen were not felt and there were no abnormal masses. Pelvic examination revealed a relaxed perineum, bilateral cervical laceration and uterus normal in size. Both

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Fallopian tubes were palpable and slightly tender. The extremities showed much wasting and no pitting edema.

Laboratory Data: On admission the urine was clear, acid, specific gravity 1.018, albumin negative, sugar 4 per cent, acetone present; microscopic—no casts nor red blood cells. The blood sugar was 440 mg. per cent; NPN 28; hemoglobin 75 per cent; red blood cells 3,825,000; white blood cells 16,500, large mononuclears 10 per cent, small mononuclears 16 per cent; neutrophils 74 per cent. The blood Wassermann test was strongly positive. Chest roentgenogram showed no evidence of parenchymal disease.

Course in Hospital: On admission treatment consisted of gastric lavage, 1000 c.c. saline hypodermoclysis, fluids forced by mouth and insulin every two hours with repeated urinalysis. Ninety units of insulin were given in the first eight hours. The urine was then acetone free. On the third day a diet of carbohydrate 103, protein 53, fat 195 was started and the insulin regulated until, on the fifteenth day, units 15 three times a day were given. Blood sugar was then 242 mg. per cent. Three-tenths of a gram of neosalvarsan were given at that time. Five days later the diet was changed to carbohydrate 250, protein 60, fat 140, which, in five days, required only units 15 three times a day to keep the urine sugar-free. The blood sugar fell to 178 mg. per cent. Any attempts to reduce insulin dosage further met with appearance of sugar in the urine. After eleven days of perfect control, sugar reappeared in the urine and the patient complained of abdominal distention. The temperature rose to 102° F. Examination showed tenderness and rigidity in the left upper quadrant of the abdomen where a small mass was palpated. It was extremely tender and immobile. Blood sugar was then 190 mg. per cent. Immediate operation was decided upon.

Operation by Dr. W. A. Ellender revealed that "the entire pancreas from tail to head showed cystic changes, one cyst being about the size of an orange." This large cyst, in the tail of the gland, contained a hemorrhagic fluid. A drain was inserted into the large cyst and the abdomen closed.

Postoperatively 1000 c.c. of 10 per cent glucose with insulin units 30 were given. The urine then showed a very slight trace of sugar. The infusion was repeated on the second day. On the third postoperative day a diet of carbohydrate 250, protein 60, fat 140, the preoperative diet, was instituted and the urine was sugar-free before each meal. No insulin was given. On the ninth day a slight trace of sugar was reported in the noonday specimen. The fasting blood sugar was 105 mg. per cent. Body weight was 102 pounds. From

this day on until discharge on the thirty-eighth postoperative day, the 24-hour daily urine remained sugar-free in spite of elevations in the diet to carbohydrate 232, protein 93, fat 189, and later to carbohydrate 355, protein 93, fat 189, without insulin. Three days before discharge from the hospital the diet became unlimited in amount. No insulin was given. Blood sugar on discharge was 110 mg. per cent.

DISCUSSION

That the patient was a true diabetic according to our modern definition is clearly evident from the history, physical examination and laboratory data. Glycosuria was in excess of four per cent, fasting blood sugar far in excess of 150 mg. per cent. The patient was in obvious acidosis on admission to the hospital. Known glycosuria was present for at least eight weeks, ruling out chance glycosurias, or temporary infection. No signs of hyperthyroidism nor pituitary disease were present. These data clarify the diagnosis except for the possibility of dysinsulinism. In the period of observation, however, no evidence of marked spontaneous changes in tolerance nor periods of hypoglycemia unexplained by insulin used in therapy were noted.

Since pancreatic cysts themselves are only infrequently seen^{3,4,5} cystic pancreatic diabetes is a still greater rarity^{3,5,6}. The clinical picture varies. It may occur as (1) diabetes, mild or severe, with no clinical evidence of cystic disease; (2) the clinical picture of cyst and diabetes^{3,7,8,9}; (3) cyst with no diabetes until the cyst is treated^{10,11}. The present case suggests the existence of another group, (4), examples of which I have been unable to find in the literature, cyst and diabetes with return of sugar metabolism to normal following treatment.

The presence in this case of two known etiologic factors, syphilis and cystic pancreatic disease, demands a differentiation as to the cause of the diabetes.

Since the appearance of Warthin and Wilson's paper¹² suggesting the importance of syphilis in diabetes mellitus, evidence has been accumulating^{13,14,15} to show that it is seldom related to diabetes and that the simultaneous occurrence of diabetes and syphilis is usually accidental. However, syphilis is regarded as a

cause of diabetes and cases are reported with remarkable increases in glucose tolerance with antiluetic therapy. Treatment must be intensive and prolonged for results and even then, as in aneurysm, the changes cannot be reversed entirely so that most cases respond poorly to treatment^{13,16}. The little antiluetic therapy given in this case (0.3 gm. neosalvarsan) was hardly sufficient to produce demonstrable clinical improvement. I have found no description of syphilis causing cystic disease as seen here, although gumma of the pancreas, a rarity in itself, could obstruct the ducts and produce cystic dilatation. Such an occurrence would be extremely unusual.

The spectacular rise in the sugar tolerance immediately following the surgical procedure leaves without doubt the cause and effect relationship of the two, and establishes the fact that the cystic disease was the immediate cause of the diabetes. How the operative procedure brought about such a remarkable change in tolerance is a matter of speculation. Release of an embarrassed circulation to the islands of Langerhans or release of pressure upon the islands themselves are feasible explanations. Since no infected focus was found, an increase in tolerance dependent upon removal of such a focus is unlikely.

Why should drainage of a cyst in the tail of the pancreas relieve the diabetes when the entire pancreas was cystic? Aside from the possibility that the cystic areas were interconnected, a satisfactory explanation is at hand. Extirpation experiments show that only one-sixth of the pancreas is necessary to maintain normal sugar metabolism. This fact alone makes diabetes with cysts, inflammation and other gross lesions of the pancreas rare. When the gland is diffusely involved, the extent of the pathologic change in the tail is exceedingly important because, in the differences in the number and distribution of the islands of Langerhans, the tail contains more than other portions of the gland¹⁷. In this case one suspects that the release of pressure in the tail restored to function a sufficient number of islands to permit maintenance of normal levels of blood sugar.

I hesitate to call this case one of cured diabetes mellitus. Postoperative follow-up was pos-

sible for only seven weeks. When the diminished tolerance may return cannot be predicted, for the basic pathologic changes have not been removed. A lesson may be drawn from Bowen's patient¹ who, although showing normal tolerance for eighteen months, died in diabetic acidosis. The criterion for cure laid down by Joslin¹⁸, evidence of return of sugar metabolism to the normal state for five or more years, is not unduly strict.

SUMMARY

A patient entering the hospital in diabetic acidosis was found to have cystic disease of the pancreas. Following operation glucose tolerance returned to normal and hyperglycemia and glycosuria did not appear on unlimited intake of carbohydrate. The occurrence of this unusual event points out the importance of the diagnosis of correctable pancreatic disease.

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KIENBÖCK'S DISEASE

REPORT OF A CASE

STAKELY HATCHETTE, M. D.

AND

C. V. HATCHETTE, M. D.

LAKE CHARLES

While Kienböck's disease of the semilunar bone can hardly be considered a rare condition, it is, nevertheless, uncommon if we may judge its prevalence by the number of reports of cases in medical literature since it was first described by Kienböck in 1910. The purpose of this paper is to call attention to the symptomatology of the condition and to demonstrate the roentgenologic findings seen in a typical early case. In view of the fact that a positive diagnosis in an early case can only be made from the roentgenogram, the roentgen findings are taken up somewhat in detail in our discussion of the disease.

DISCUSSION

The patient usually comes to the physician with a history of having suffered an injury to the wrist. A roentgenogram may have been made at the time of injury or soon after, but most frequently a negative report has been given. Pain in the wrist may persist for a period ranging from a day or two up to several weeks. At this time it usually stops and the period of quiescence suggests that the injury has been completely repaired. After a variable length of time the patient again begins to experience discomfort in the wrist which is accompanied by limitation of motion, pain and swelling. It is at this time that the patient returns to his physician and another roentgenogram is made. If the general outline of the bone has been preserved (fig. 1) the irregularly calcified areas may blend and the condition may pass, leaving little deformity to indicate that a lesion has been present. In this

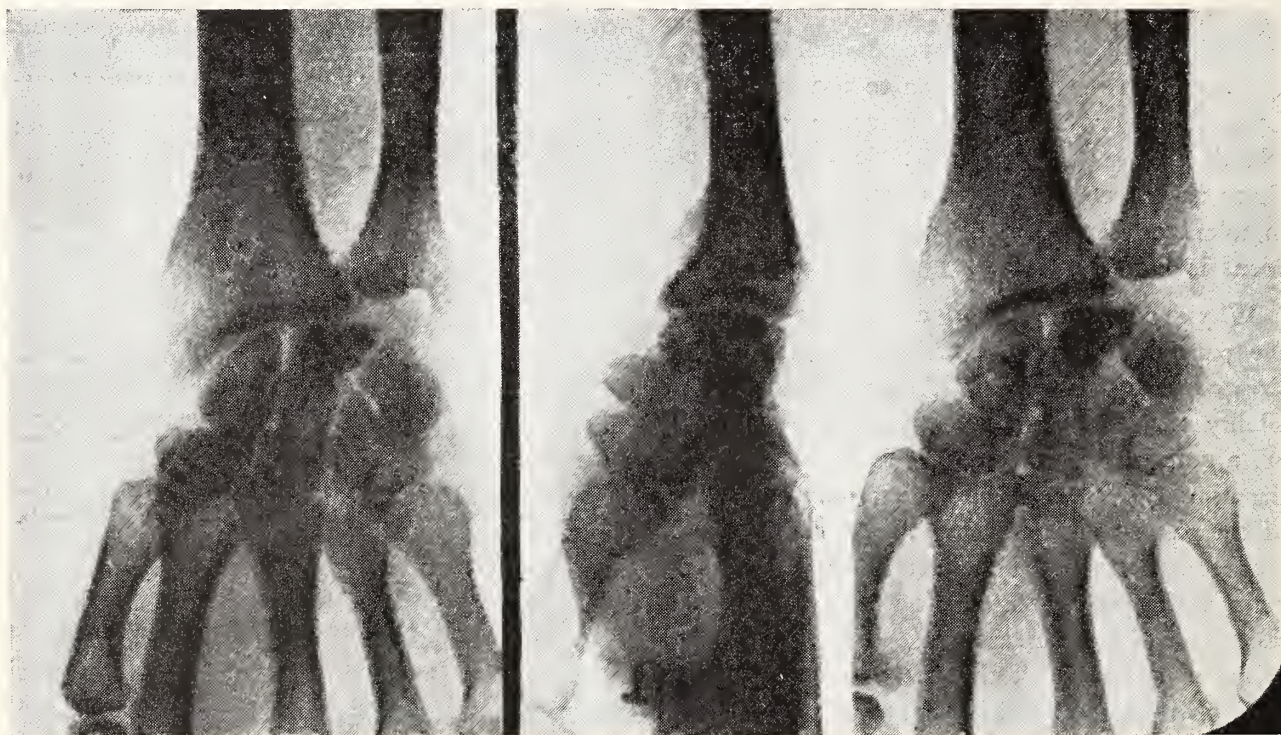


Fig. 1. The semilunar bone is much more dense than the other carpal bones. Cystic areas of rarefaction are

present within it. The ulna is shorter than the radius and their articular surfaces are not in the same plane.

case, areas of increased density, together with cystic areas of decreased density, occur together in the bone (fig. 1). Healing may occur as stated above. However, the condition may progress still further so that the islands of bone of increased density may have the ap-

pearance of having been crushed together and a wedge-shaped bone results which has a considerably greater density than the remaining bones of the wrist, and compression deformities of greater or lesser degrees occur. In the event of compression taking place, the frag-

ments of bone eventually heal in the deformed shape and the symptoms gradually subside. If the bone heals in this deformed state, the joints of which the articular surfaces are a part are subjected to abnormal conditions, and as a result of abnormal stresses and strains, early chronic arthritic changes develop. This brings on the third stage which consists of pain, discomfort and limitation of motion.

Numerous explanations have been given for the changes seen in the bone, including fracture of the cancellous bone, injury to the blood vessels, tearing of the ligaments and interference with the nutrition of the bone, embolism, aseptic necrosis, and necrosis due to low grade septic organisms and trauma. The roentgenologic appearances, however, are suggestive that fracture of the cancellous bone is the most likely cause, and that the bone probably becomes compressed and deformed as a result of pressure and muscle pull while the bone is still in the plastic reorganizing stage.

Hulten,⁸ after examining 400 normal wrists, found that in 23 per cent of cases the ulna was shorter than the radius and that the articular surfaces of these two bones were not in the same plane; he also found that Kienböck's disease only occurred in those patients with the shorter ulna. This feature is well shown in the accompanying roentgenogram of this case, and it is suggestive of the semilunar bone being more likely to be subjected to severe injury if the ulna is short (fig. 1). Brailsford², however, reports cases of Kienböck's disease in which the radius and ulna are of normal length, some of his cases even presenting a marked collapse of the affected bone.

CASE REPORT

D. I., aged 26 years, a white male, came to the office of one of us (C. V. H.) on October 1, 1937. The background of his medical and surgical history was of no significance. He stated that on May 18, 1937, while working on an oil derrick he received an injury to the palmar surface of his right hand which caused a sudden bending backward of the hand and the deliverance of a hard blow to the "heel" of his hand as it was in this position. He immediately felt a severe pain in the hand and wrist which radiated up to the arm and shoulder. He did not stop working, but continued on to complete the day's work which ended about two hours after the accident. After his injury he used the

right hand sparingly, working almost entirely with his left hand.

He was sent to the company doctor for treatment as soon as the day's work was over. At the physician's office the wrist was examined both physically and by means of roentgen rays. The patient was told that he had sustained a fracture of the wrist. The right hand and wrist were put in a cast for two days, at the end of which the cast was removed and an ointment applied to the hand and wrist for about a week. In the meantime the swelling had subsided, and, at the end of the nine day period from the time of the injury, the swelling had entirely disappeared and the wrist felt a great deal better, though not yet completely free of pain. He was allowed to remain on the "sick list" a few days and was then sent back to work on May 27. He used the hand on this day with some difficulty and, at the end of the day, noticed a slight swelling in the region of the wrist. The next day he again worked with the hand and, as the day progressed, the wrist became quite painful and so swollen that, at the end of the day's work, he could hardly remove his glove from his hand. He was again sent back to the company doctor where his hand and wrist were strapped with adhesive tape and he was put back on the "sick list." During the next four weeks he received daily heat treatments with the infra-red ray. Because the wrist remained swollen and painful at the end of this time, he was referred to a physician in another city who treated him for four and a half weeks more with short wave heat therapy. At the end of this time the swelling had completely subsided and the wrist was practically symptomless. He was discharged from further surgical care and sent back to work on July 26. He did not report for work immediately, deciding to "do a little work around the home" for a few days. At the end of these "few days" the wrist and hand swelled again and the wrist became very painful once more. He went back to the physician who had seen him originally, was told that this physician could do nothing more, and it was recommended that he have a surgeon operate on his wrist. Nothing was done for seven weeks, and the patient was referred to one of us (C. V. H.) through a local attorney for a diagnosis and estimate of disability.

The general physical examination was irrelevant. The pulse rate was 68 and the temperature 98.6 degrees F.

The local physical examination of the right wrist showed a moderate degree of swelling over the dorsum of the wrist. Palpation over the area was painful. All motions of the wrist were limited, and this was especially so of extension. Passive

motion was limited in all directions and was painful in attempts at extension. On jarring the thumb the patient complained of sharp pains over the dorsum of the wrist corresponding to the area of greatest swelling. There was free motion of all the phalangeal joints, and no pain on movement in any direction.

Roentgenographic examination showed the bones of the wrist were normal in appearance except for the semilunar. Its outline was intact, but the bone itself was much more dense than the other carpal bones and it showed several cyst-like areas of decreased density. The ulna was shorter than the radius, so that their articular surfaces were not in the same plane.

Diagnosis was made of Kienböck's disease, (synonyms are traumatic malacia and semilunar malacia), congenital shortening of the ulna.

SUMMARY

Kienböck's disease, which is an osteochondritis of the carpal semilunar, consists of a degeneration of this bone following trauma, and it is characterized by a persistence of pain, swelling, and a disability that fails to respond to the usual remedial measures. Surgical removal of the bone frequently becomes necessary. The great majority of cases reported have been in males in early adult life, and especially in those engaged in manual occupations. The condition is explained as being the result of fracture of the cancellous bone, injury to the blood vessels, tearing of the ligaments and interference with the nutrition of the bone, embolism, aseptic necrosis, and necrosis due to low grade septic organisms and trauma.

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ISOLATED FRACTURE OF THE OS TRIQUETRUM

A. MAYORAL, M. D.
NEW ORLEANS

CASE REPORT

Recently a young man came to the out-patient clinic of the U. S. Marine Hospital, New Orleans, and gave the following history: A week previously, while doing gymnastic exercises on the horizontal bars, he fell on his out-stretched hands, since which fall the right wrist has been painful. He believed that he had a sprained wrist. As the pain did not improve, he came for treatment.

Examination revealed no impairment of movement, no swelling, pain localized to the pisiform cuneiform region. Roentgenogram revealed a fracture of the os triquetrum (fig. 1). Not having seen

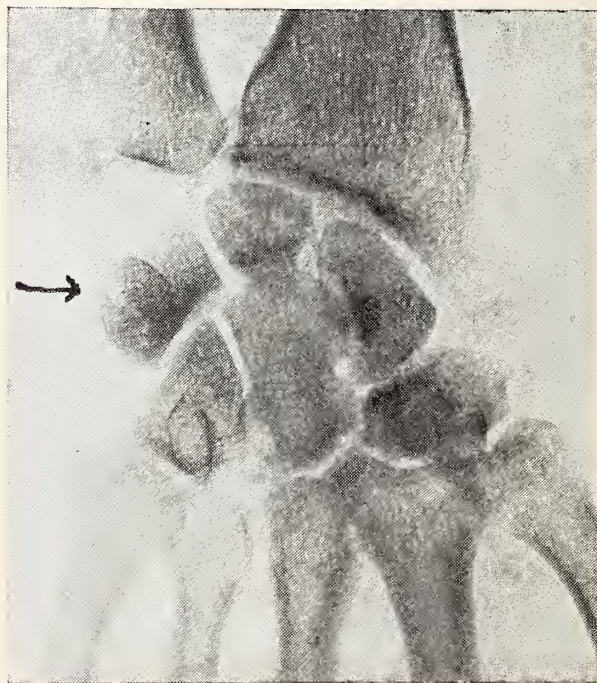


Figure 1.

this fracture before, the current textbooks on general surgery and special works on fractures were consulted, but little information was gained from them as the subject was meagerly treated.

DISCUSSION

In the literature as far back as 1014 I was able to find six articles ^{1, 2, 3, 4, 5, 6} dealing with fractures of the os triquetrum. The longest series is reported by Volkmann⁵, who records 48 cases (6 of his own), in 35 of which the carpal cuneiform is the only bone fractured. Of a total of 104 cases recorded in these six articles, 57 were isolated fractures of the os triquetrum. Search of our own records showed that in the past nine years 26,180 roentgenograms had been made of traumatized bones or joints for suspected fractures, and only once was this type of fracture discovered. I therefore believe that isolated fractures of the os triquetrum are rare.

The symptoms in our case were pain on motion, not sufficient to interfere with movements, tenderness localized over carpal cuneiform, no swelling, no crepitus, or deformity of wrist. Clinically, the injury could not be de-

tected; only a roentgenogram revealed the fracture.

It seems that one of two conditions must occur for this bone to be fractured: (1) Overstretching of the ligamentum carpi-dorsalis or (2) compression injury to the wrist.

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THE GRADUATE MEDICAL ASSEMBLY

Ample notice has been given to the members of the State Medical Society concerning this outstanding meeting which will take place in New Orleans March 7-10. Among other forms of announcement, programs have been mailed throughout the State. However, in spite of the publicity that the officers of the organization have arranged for, it would not be amiss again to call attention to the splendid character of this

assembly and to mention a word or two about some of the men who are going to appear on the program.

Starting Monday morning there will be the usual addresses of welcome and then will follow a talk on diabetes by Dr. Reginald Fitz, one of the outstanding clinicians in this country. The next two hours will be spent at luncheon round-table discussions and then the organization will reconvene to hear some more of the scientific presentations. It is impossible to mention each man who is to appear on the program and to give the detailed description of what is to occur each day, but from personal observations it can be said that Dr. Harvey B. Stone's talk on carcinoma of the colon will be presented by a man who is a splendid speaker and who presents his subject with authority. At the evening session Dr. A. Graeme Mitchell, Professor of Pediatrics at the University of Cincinnati College of Medicine, has a most intriguing topic "What I Don't Know About the Endocrines." It is safe to assume that Dr. Mitchell will point out that a great deal of hypothesis and unproved statements exist in the realm of endocrinology. On Tuesday practically the same men will appear on the program and very much the same order of business will be followed. On Wednesday and Thursday a new group of speakers will tell what they know about their subjects. Again space precludes the possibility of mentioning each man but attention should be called to the fact that Dr. Arthur Hertzler, whose nine books on surgical pathology are delightful reading and whose ability as a speaker is well known, will philosophize on "The Degenerative Toxic Goiter Heart" at the afternoon session. Dr. Warren Vaughan of Richmond will expound on allergy on this same day and in the evening session Dr. Udo J. Wile will give a lantern demonstration on common mucous membrane lesions of the mouth. On the last day the same group of speakers will hold forth but of course on different subjects. Some of the titles seem most interesting: Dr. Temple S. Fay on "The Mechanism of Headache"; Dr. Norman F. Miller on "The Woman at Forty"; Dr. Hertzler on "Pathology and Treatment of Dentigerous Tumors"; Dr. Wile on "The Treatment of Syphilis and Pregnancy." These would

seem like presentations which should interest every one.

That night there will be a joint meeting with the Orleans Parish Medical Society.

In addition to the attraction of the speakers, a splendid scientific exhibit by 39 different physicians and agencies and a splendid commercial exhibit will round out the professional program. In addition to the serious phases of the meeting, entertainments have been provided by the active chairmen and their committees; the opportunity to play golf if a man wants to slip off for an afternoon and other extraneous activities have been arranged. Altogether this second session of the New Orleans Graduate Medical Assembly should be of very real value to the practicing physician. The outlook at the present is that it will be a bigger and better meeting than the highly successful gathering of the organization last year.

ACCOMPLISHMENTS OF THE LOUISIANA STATE BOARD OF HEALTH

A little pamphlet has been sent out by the State Board of Health under the same title as that given above. It shows very clearly what the Board of Health has done in the last few years to improve health and sanitary conditions throughout the State. It also by implication contrasts the State Board of Health of bygone days with a modern efficiently functioning health service.

In 1937 there were six bureaus at work, some recently established, some long in existence but in all of them their activities have increased markedly in the past few years. The Bureau of Foods and Drugs has jurisdiction over what we order for our patients. It meticulously supervises the distribution and marketing of eggs, milk, poultry and foods, as well as drinks and drugs. The Bureau of Sanitary Engineering watches over water supplies and sewage disposal, as well as mosquito control and passes on plans for new schools and public buildings. The Bureau of Laboratories now has a central chemical laboratory and a bacteriologic laboratory with five branches at strategic points throughout the State. The Bureau of Vital Statistics, one of the earliest bureaus to func-

tion, collects and records birth and death rates. To the Bureau of Epidemiology and Malaria Control is assigned the duty of collecting and tabulating the communicable diseases reported from throughout the State; to it also is assigned the function of advisory health service.

In the last couple of years the Bureau of Parish Health Administration has grown enormously. At the present time there are 39 whole-time parish units with complete personnel working throughout the State. They cooperate and integrate their duties with the headquarter Bureaus. To this bureau is assigned a tuberculosis diagnostic clinic, mobile in character, as well as a similar malaria control unit, both of which move from place to place in Louisiana, the one diagnosing tuberculosis, the other unit planning with the local authorities on how best to control malaria. Fourteen venereal disease clinics have sprung up in the last few years. It is planned to open others in a short time.

Many of the readers of the Journal have probably perused the concise pamphlet from which the above facts are obtained. It does not seem redundant, however, again to stress the splendid work that is being done by the Louisiana State Board of Health under the direction of the President-Elect of the State Medical Society. It does not seem amiss here to offer a word of congratulation for splendid accomplishments and for far-reaching plans for improvement of the State Health Service.

ANOTHER FUNCTION OF THE LIVER

It has been known that in certain types of advanced liver disease a macrocytic type of anemia comparable hematologically to pernicious anemia may develop.¹ This type of anemia is assumed to be due to failure to store the anti-anemic factor which is elaborated in the stomach. This type of anemia is by no means uncommon but not nearly as common as the microcytic anemia, commonly spoken of as secondary anemia, which is very frequently seen in all types of liver disease.

Hawkins, Robschey-Robbins and Whipple²

1. Wright, D. O.: Macrocytic anemia and hepatic cirrhosis, *Am. J. Med. Sci.*, 189:115, 1935.

2. Hawkins, W. B., Robschey-Robbins, F. S., and Whipple, G. H.: Hemoglobin production in anemia as influenced by the bile fistula, *J. Exper. Med.*, 67:89, 1938.

have noted in previous experiments that hemoglobin production is profoundly influenced when there is a bile-fistula experimentally produced. In those dogs with the artificial fistula only about one-half as much hemoglobin is produced on a standard diet as compared to the control animals. To study intensively this question, this group of investigators took a series of animals, maintained them in good health on an adequate diet and in satisfactory weight equilibrium. It was found that in these bile-fistula animals iron given by mouth, when an anemia was established, produced only one-half the amount of new hemoglobin as it did in the control periods. Iron absorption is undoubtedly seriously impaired in the anemic bile-fistula dog but this does not explain entirely the anemia that is cured with difficulty. These dogs also show a pronounced tendency to bleed probably as result of disturbances in the production of prothrombin. As result of the studies of the authors on the bile-fistula animals, which at autopsy show no evidence of bone marrow disturbance, they have come to the conclusion that inadequate hemoglobin production in their animals is dependent upon disturbed liver function. Thus they have evolved another function of that tremendously important, largest sized organ of the body with its innumerable functions and purposes in the human economy.

PREVENTION OF RENAL STONES

Kidney stones are extremely common. They may be quiet concretions or they may be the cause of considerable amount of discomfort, pain and other disturbing symptoms. Most physicians do not consider the possibility of preventing stones until after they have been formed. This, of course, is perfectly obvious as the majority of people do not have them and there is no particular reason why the great mass of the population should subject themselves to elaborate regimes which for the most part would be rather difficult to follow and which undoubtedly would make the patient introspective. However, once a person has had stone there is a

strong likelihood it will return and there are measures which may prevent further formation or hold in abeyance further increase in the size of the calculus.

A stone is formed by precipitation of crystalloids as result of certain factors, the primary one of which undoubtedly is found in such things as stasis, infection, hypovitaminosis, lack of colloids and excess of crystalloids in the urine, according to Fuller Albright.* Given such a factor, or factors, precipitation is favored if there happens in the urine a large amount of crystalloids which are going to form or have formed a stone. If the composition of the stone is known, certain procedures may prevent further accretions to it; but first, in outlining medical treatment, the determination of the kind of stone is important. This may be determined by roentgen ray appearance of the calculus, the type of diet the patient eats, the composition of the urine and the size of the stone. The four main types of stones are: cystine, uric acid, calcium-phosphate and calcium oxalate. The prevention of the first consists in keeping the urine alkaline; the second, again keeping the urine alkaline is the most important prophylactic measure, far more so than a low purine diet. Calcium-phosphate stones may be obviated by keeping the diet acid, chiefly through the administration of large quantities of meat. Acid forming drugs may be given and the patient should be warned against the taking of excessive amounts of alkalis for digestive disturbances or for any other reason. Calcium oxalate stones may be prevented only by giving a low-oxalate diet.

In any form of calculus the urine should be kept dilute by having the patient take large amounts of fluids. The urine may be kept alkaline by the administration of alkalis as well as through an alkaline ash diet. These measures are suggested only when the patient is free from urinary tract infection. If infection is present it should be eliminated, but this is another matter.

*Albright, Fuller: Some medical aspects of the renal stone problem, *New England J. Med.*, 217:1063, 1937.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

HIGHLAND SANITARIUM

The Staff of the Highland Sanitarium held its monthly meeting on February 17, 1938, in the Clinic Building, following dinner at 7:00 p. m.

SCIENTIFIC PROGRAM

Dr. Mathews presented two most interesting cases of lymphosarcoma of the gastrointestinal tract. Both patients complained of cramping abdominal pain of the intermittent type, the pain being nocturnal in character. The finding on physical examination was lower abdominal tumor mass; exploratory laparotomy revealed a lobulated tumor mass involving the lower ileum. The microscopic picture was typical of lymphosarcoma. Dr. Mathews also discussed two cases of Hodgkin's disease involving the gastrointestinal tract, one case involving the stomach which was interpreted by roentgen ray examination as being carcinoma of the stomach. The microscopic examination of the resected stomach revealed findings typical of Hodgkin's disease. The second case of Hodgkin's disease was found at autopsy to involve the cecum. Findings at autopsy revealed the mass in the region of the cecum to be adherent to the adnexa with rupture and peritonitis. Discussion was opened by Dr. Butler, followed by Dr. Webb and Dr. H. G. F. Edwards, and closed by Dr. Mathews.

Dr. George Wolfe reported a most interesting case of disseminated encephalomyelitis in a baby aged 2 years 8 months. Dr. Wolfe pointed out the confusing symptom complex and the difficulties encountered in making an accurate diagnosis. Dr. Wolfe stated that the patient was given fever therapy in the form of typhoid vaccine, and, on the last check-up examination on January 24, the baby seen to be clinically cured. Discussion was opened by Dr. Duncan and closed by Dr. Wolfe.

Paul W. Winder, M. D., Sec.

FRENCH HOSPITAL

The French Hospital Staff meeting was called to order with Dr. J. Palermo presiding; the minutes of the last meeting were read by Dr. R. E. Rougelot.

Dr. S. C. Lyons spoke on the treatment of carbuncles, furuncles and boils. Stock vaccine of staphylococcus is used (Parke Davis). If the patient is seen early and vaccine treatment begun, the pus can be evacuated about the third or fourth day. The first injection consists of $\frac{1}{2}$ c.c. which is increased once again every 12 hours until 2 c.c. is reached. It is given in the deltoid muscle. The lesion usually subsides in four to six days. Additional local treatment is used, depending upon the physician's choice. If the lesions are seen later than the first or second day, vaccine is still given because it helps to liquefy the slough. Mortality

from carbuncles is about 6 per cent. Location occurs in the order named: neck, back, head and face. When diabetes is present the mortality rises to 30 per cent. The age incidence varies from 40 to 60 years. Dr. Lyons quoted Dr. W. H. Harris as saying that the vaccine was of value due to the fact that the opsonic index is increased and hence the body cells (leukocytes) have a high phagocytic power. In conclusion, he states that he considers the vaccine treatment is the best means of treating this type of lesion. However, it does not seem to be so successful in treating acne.

Under new business Dr. Rougelot suggested that the scientific essays committee appoint in rotation a staff member in the various branches to report on some subject in his field or to comment briefly on a journal article or some interesting case at each meeting, either in conjunction with the scientific program or when none has been formed. The *raison d'être* being to stimulate an interest in the meetings and to encourage attendance. This was voted on favorably, but is still to some extent under discussion, the gist of this discussion being that the members favor this line of thought, inasmuch as it concerns a symposium of staff members on an interesting case or condition that may exist at that time in the hospital.

Dr. John Menville suggested that a definite time limit be observed and this was moved and carried.

Dr. Jung suggested, in line with the above discussion, that literature concerning the diseases causing the deaths of the month be discussed by the staff members appointed under the above plan.

Dr. Sicomo moved that no death be discussed unless the attending staff physician be present. This caused some discordance and the discussion was tabled until the Executive Committee could determine the ruling of the American Hospital Association.

R. E. Rougelot, M. D., Sec.

GRADUATE SCHOOL
LOUISIANA STATE UNIVERSITY
MEDICAL CENTER
NEW ORLEANS

The scientific meeting of February, 1938, was called by Dr. James T. Nix, Dean of the Graduate School. Dr. Neal Owens presented the following paper:

CANCER

Cancer presents one of the most difficult problems confronting the medical profession today. It ranks second in the list of diseases responsible for high mortality, being next to heart disease. During the past year a statistical survey showed that 153,000 deaths occurred in the United States

alone as a result of this malady and one eminent authority estimated that 450,000 others now living in the United States were suffering from some form of this disease. The mortality rate from cancer in any given area in this country will equal about 10 per cent of the total deaths from all causes in that area. About 82 per cent of the deaths resulting from cancer occur between the ages of 40 and 80.

Cancer is a disease which manifests itself in a variety of ways and varies considerably in its behavior. Contrary to the belief held by many, there is no age which is free from its attack. Children are born with it and yet it is most frequently found among the aged. Some types of cancer are external, others are internal; some grow with a marked rapidity, others slowly; some spread rapidly through the body, while others remain local. All types of cancer begin as a single cell or group of cells, growing independently of the rest of the body, and serve no useful purpose. If permitted to grow unchecked, cancer is always fatal unless the host suffers death from some other cause.

An eminent authority has stated that every case of cancer is an emergency. Time is one of the most important factors in its treatment, for in many cases of cancer the stage within which a patient can be offered a cure is limited to a few weeks. A proved case of cancer is so serious that it is criminal for a patient to waste valuable time in soliciting the attention of non-medical persons who are obviously incompetent in the treatment of this disease. Many mistakes occur in the initial handling of cancer and those unfortunately usually result in death to the patient. Patients having cancer which has been diagnosed early frequently have their one and best opportunity for a complete cure at the time the cancer is first treated. Improper initial treatment of cancer frequently robs the patient of all chance for a complete cure and it is for this reason that patients should seek physicians qualified to render proper treatment at this stage.

The two principal factors which can appreciably reduce the death rate in cancer are: (1) prevention, (2) early and proper treatment. Although no known cause for cancer has ever been discovered, it is generally conceded that chronic irritation forms the background for this disease. Cancer usually does not develop in healthy tissue, but as a rule develops in organs or parts of the body affected by chronic irritation or inflammatory changes. Removal of chronic irritation, moderation in living, and avoidance of all excesses, therefore, offer three important methods in the prevention of this disease.

Cancer of the stomach is more frequently found than any other type. Although its cause is not definitely known, it has been shown that factors

such as ulcer of the stomach, overeating, and dietary indiscretions in cases of individuals chronically suffering from indigestion frequently predispose to the formation of this type of cancer. Avoidance of all forms of abuse to the stomach along with medical supervision in patients suffering from chronic indigestion or unexplained gastric pain offers the best method of prevention of cancer of the stomach. Any chronic disturbance in the intestinal tract, chronic constipation, and particularly bleeding from the rectum, should call for an immediate examination by a competent physician.

Cancers of the breast are usually associated with chronic inflammation. Any lump in the breast or chronic ulceration of the nipple, particularly if associated with a discharge, is serious and should have the immediate care of a physician, since many of these, if permitted to continue, will ultimately become cancerous. It has been shown from statistics that when breast cancer is properly treated in the early stage of the disease that 70 per cent of the patients so treated are alive five years after operation, whereas if the disease is in the advanced stage, 96 per cent of these patients will not be alive at the end of five years.

Cancer of the uterus or mouth of the uterus is most frequently found in women who have borne children and it is generally attributed to a chronic ulcerative condition, resulting from former injury in childbirth. Prevention in this type of cancer requires that any injury of this organ should have proper repair. Also any unexplained bleeding, chronic discharge, or irregularity should call for a thorough examination.

Cancer of the skin and of the mouth and tongue comprise a group which can be largely classed as preventable. These growths usually result from some irritating factor, and in most instances they develop in clear view of the individual suffering from them. Chronic irritation to a mole or wart frequently results in cancer. Moles or warts which are located in areas subject to chronic irritation, as the feet, over the belt line, or in an area where they are subjected to chronic irritation from corsets or brassiere straps, should be removed at the first sign of any activity. Black, hairless moles are more dangerous than any other type and for this reason should be watched closely. Any of the last mentioned group located in areas subjected to irritation should be removed.

White spots on the lip, tongue, or cheek are precancerous and should never be subjected to irritation. The practice of applying chemical irritants to these is dangerous and should never be done. Proper removal by a sharp cutting instrument is probably the safest procedure in removing these if they persist. Any chronic sore or fissure on the lip is dangerous. Many eminent

authorities state that any ulcer or fissure of the mouth or lip which does not heal under proper management within three weeks should be removed surgically.

Cancer of the mouth and tongue usually results from bad teeth, improper dental devices, syphilis, tobacco, and other chronic irritants. They, therefore, are largely preventable. Good dentistry and oral hygiene are two of the most important factors in preventing cancer of this region. Any chronic ulcer of the tongue, mouth, or cheek should receive immediate treatment by a competent physician, and where questionable should be removed surgically.

The only correct treatment of cancer is operation, radium, or roentgen ray, applied by physicians skilled in these particular fields. The merit of these methods depends upon the type of cancer and its location. In some growths surgical procedure is indicated; in others, roentgen ray and radium are best suited, and in still others a combination of these three offers the best result. Improper and inadequate application of radium or roentgen ray to precancerous lesions can result in the formation of cancer or in permitting an early growth to advance to a hopeless stage. It is, therefore, important that any irradiation should be supplied by physicians who are specialists in this field.

Many patients with moderately advanced cancer have a feeling of hopelessness regarding the possibility of cure and quite a few refrain from availing themselves of a possible cure which is offered by radical operation because of the unsightly results. Much can be offered today in the restoration of defects resulting from the removal of cancer, even the reconstruction of major portions of the face, complete reconstruction of the nose and major defects about the mouth. Patients can now be less skeptical in subjecting themselves to eradication of cancer since they can be assured that hideous deformities need not be a necessary sequel.

HUTCHINSON MEMORIAL CLINIC

DISTURBANCES OF THE ENDOCRINE SYSTEM

Probable Hypopituitarism (Dr. L. C. Scott, Department of Preventive Medicine): The case report I wish to present is that of a girl, approximately thirteen years of age, who came into the Clinic suffering from an acute infection. This however, was not the principal condition, the main complaint being obesity and nervousness.

This girl in so far as her parentage is concerned is rather unfortunate. She has a mother who is very easily influenced and her father is an

irascible individual with a violent temper. She is said to have been a four-and-one-half pound baby at birth, developing normally up to the tenth month. She is said to have walked at seven months and to have sung at nine months. The first tooth appeared at the eleventh month; otherwise she was normal. After the tenth month she began increasing in weight and has continued.

There are several points of considerable interest in the personal history of this child. She had measles at two years, diphtheria at four years, whooping cough at four and one-half years, and chickenpox at four years and nine months. She had convulsions and coma in 1929, which lasted several days. In 1930, she had scarlet fever. She has had pneumonia, pyelitis and a gangrenous appendix. An appendectomy was performed at ten years of age. An arm and leg were broken, the first about the third year, and the second about the tenth year. She has had difficulty in school, with her friends, youngest brother and mother. She cannot make friends in school, cannot get along with her teachers, and apparently hates her mother. She is very irritable, impudent and very difficult to manage; the child has developed into a neurotic subject.

Her body measurements are not normal; the upper, from pubis to vertex, is greater than the lower. The development of the genitalia is infantile. According to the history the menstrual period began at ten years although the mother informed me that it had not occurred at all. The child also had a growth on her left shoulder, which was removed by the Department of Surgery, and was pronounced to be a subcutaneous cyst. She has been roentgen rayed a number of times on account of a familial history of tuberculosis, and plates of the lungs have been made but are consistently negative. The head is large and round, and suggests hydrocephalus. (Roentgen rays shown).

The child's breasts are large and striated. This suggests Cushing's disease. The radiologist states that the skull is normal, and that the sella turcica is normal. There is a calcification of the pineal gland. There was a darkening in the sinuses probably because she suffered from sinus trouble.

Among the laboratory examinations, the following were noted: Erythrocytes, 6.0 million; hemoglobin 90 per cent; white blood cells normal; blood calcium 9.2 (mg.) per cent; cholesterol 153 (mg.) per cent; Wassermann and precipitin reactions negative and stool negative for parasites.

We have not been able to find anything very remarkable in the laboratory except the erythrocytosis and possibly the diminished blood calcium. This child is very heavy, she weighs 176 pounds now and she is gradually increasing in weight. She is apparently a case of hypopituitarism, not

however the usual sluggish type but is very active, plays and does not tire easily and does not sleep frequently. No films have been made of the epiphyses to see how far the ossification has progressed.

The diagnosis, at least the tentative one, is hypopituitary dysfunction involving both the anterior and posterior lobes, with possibly some parathyroid deficiency. The treatment would be injections of whole pituitary extract. It is rather remarkable that this girl tolerates quite a large amount of thyroid extract and it may be that it has an indirect reaction of some sort on other glands. It has not, however, influenced her obesity; as a matter of fact, she has increased in weight within the last few weeks. The case is not closed and we shall continue the study with plates of the bones with the hope of ascertaining the true condition.

Diagnosis: Hypopituitary dystrophy (Frohlich's disease) with possible insufficiency of the parathyroids.

Unusual Cases of Thyroid Disturbances (Dr. H. R. Mahorner, Department of Surgery:) I have three cases which I wish to present, each illustrating a difficult problem not only in diagnosis but with regard to the advisability of surgical intervention.

The first lady is 38 years of age. I am going to read her history which was given to the student by her. It is a history that is very characteristic. She complained of weakness and nervousness and she stated that her present illness began about ten years ago when she had smothering spells. At that time her doctor put her on Lugol's solution. She took this for six weeks and it helped her. Her doctor advised a thyroidectomy, which her family would not permit. For the past five to six years she has noticed a tight feeling in her neck. She began to notice that she would become tired much more quickly than usual about five years ago and later had to give up her job because she was so weak she could not work. She lost about twenty-two pounds in the last two or three years but has regained ten pounds in the last year. She says that her appetite is good, and that she eats enough for two. She perspires freely all the time and enjoys the winter more than summer. She says that she has not been very nervous until the past year and since that time she has become nervous; recently, however, she is not nervous.

When we examined her we found her relatively composed and upon questioning her closely she told us that the tight feeling in her neck was so severe that it felt "like an abscess that wants to come to a head" and if this sensation alone could be relieved she would feel "like a million dollars," and would "feel well." Her pulse rate on two occasions was 76 and 80; her basal metabolic rates have been plus 20 and plus 16.

Dr. Mahorner: Mrs. C., you told me today about that feeling on the right side of your neck. Is it a tight pressure?

Mrs. C.: Yes.

Dr. Mahorner: Do you feel that if that "abscess", as you term it, were removed that it would relieve that pressure?

Mrs. C.: Yes. The sensation extends in my right arm, also.

Dr. Mahorner: Please step up on this chair as you did upstairs.

(The patient stepped on the chair with agility and without weakness).

This patient's blood pressure was 88 mm. of mercury systolic and 60 mm. diastolic on one occasion and below 90 on another occasion. The thyroid is entirely normal in size. She presents a history that is entirely consistent with hyperthyroidism. We get a very stable pulse. It remains relatively slow and she feels too much pressure in her neck for the objective findings. We felt that whereas she presented some of the symptoms of hyperthyroidism, good appetite and weight loss, but without an enlargement of the neck, it is probably a case of chronic nervous exhaustion. We attempted a therapeutic test and Lugol's solution. She says that the medicine does not help her but that if that lump were removed she would be well. I might mention that with her tired feeling and weakness, tuberculosis was considered and a roentgen ray was made of her chest, which showed negative findings.

The second case to be presented is another interesting problem.

This lady is 58 years of age. She was referred to us from the Department of Medicine, and the history briefly is that last summer she had an attack of dyspnea and swelling of ankles and she had repeated attacks which would indicate that she had some cardiac trouble. She was examined in that Department. Her basal metabolic rate on two occasions was plus 28 and plus 38. She has a thyroid gland that is entirely normal in size. On the other hand, she has some cardiac damage, according to the Department of Medicine. She has a rapid pulse rate, today being 140. There is no electrocardiographic evidence of myocardial disease. The question comes up again: Is hyperthyroidism, or purely a cardiac change to explain her symptoms? The very rapid, labile pulse rate is significant. Another thing that is noted is the blood pressure of 160-170/112, with a very much enlarged heart. Hypertension itself can cause an elevated metabolic rate. This case apparently is one of marked hyperthyroidism.

The third case is that of a boy. This is more a problem of endocrinology that does not involve the difficult question as to whether or not we should operate on the patient. It is very definite that we should not.

He is eleven years old, and one year ago he began to have an enlargement in his neck, with apparently no other signs. In the last six months a rapid increase in the size of the thyroid gland has been noted. He talks very little.

Dr. Mahorner to patient: How long did it take you to come down here? Did it take you an hour? Did you come by train?

Patient: In a low tone of voice—"No."

That gives you an idea of the relative response that we get from him. It is difficult to understand his voice. Because of that retarded mental development we asked the Department of Neurology to see him and they gave us a very complete report on what appeared to be his condition. The child has a protuberant abdomen and has a dry skin. There is some appearance of myxedema. However, myxedema is not entirely responsible for his mental retardation. We took roentgen rays of the epiphyses to see if there was any myxedema. The roentgen rays reveal normal epiphyses. They look to me to be those of a 16 year old instead of an 11 year old child. They appear to have a tendency to early ossification. The basal metabolic rate is minus 3. The sella turcica appears to be normal. It is certainly not too large. It is possible that it is too small with a complete bridge between the clinoid processes. This boy came to the Department of Surgery with the question as to whether or not we should do anything with him. He is getting iodine daily. Dr. Golden suggests thyroid extract, in addition, which I think is a very good suggestion. Operation is not indicated for the enlarged thyroid gland as there are neither local (pressure) symptoms nor general symptoms due to his goiter. It is an adolescent (colloid) goiter in a myxedematous child.

Sugar Tolerance Test (Dr. C. R. Jones, Jr., Department of Medicine): I wish to add a little bit to the title of "Sugar Tolerance Test." I intend to talk to some extent on the clinical value of sugar tolerance tests, and discuss what we mean by the test later on.

First, there are the different types of procedure to be used. There is no one that seems to offer much advantage over others, because the value of all of them is quite small. One man prefers a certain dosage of glucose and another prefers a larger or smaller dosage, and still another prefers to regulate the dosage by the body weight. Some prefer half-hour blood samples, others one-hour blood samples. The duration of the test varies from one hour to five hours. The collection of urine samples varies with the technic of the man doing the procedure and the patient's ability to void. It is difficult to report on different procedures used by different men. There are other variables such as the site of blood collection, the technic of determining the dextrose

content of the blood and urine, and the technical sincerity and ability of the one who does the dextrose determinations.

There are small groups of patients in which a dextrose tolerance test is indicated. The first of these includes the patients in whom a low renal threshold for dextrose is suspected; the second is hyperinsulinism, the only truly endocrine condition in which the procedure is of incontrovertible value though it is not indispensable. The blood sugar curve, after sugar ingestion in hyperinsulinism, will eventually descend to very low levels and really be quite typical, but if one obtains repeatedly low blood determinations at the time of hypoglycemic symptoms the diagnosis should be sufficiently clear-cut though one would be rather bound by custom to do a dextrose tolerance test.

The value of frequent blood and urine samples when renal glycosuria is suspected need not be pointed out.

The hyperglycemia of hyperthyroidism and the hypoglycemia of cretinism and myxedema are well known, but I cannot imagine and certainly have never seen patients in whom these findings or lack of these findings would change the diagnosis, prognosis, or clinical course.

One can take groups of certain diseases and average the sugar curves obtained from them and perhaps show a difference from some dissimilar group, but between the different patients in one group the variations are so great that there is little of value to be obtained as far as the individual patient is concerned.

In diabetes mellitus the ordinary sugar tolerance curve is of very little value. I have no idea what is meant by pre-diabetes. The term usually is employed in reference to patients showing high or long curves and are not definitely diabetic. I have followed patients for about three years and they are still pre-diabetics, not having developed diabetes as yet. There have been similar patients reported who showed no development of diabetes after being called pre-diabetics for nine or ten years. If one takes a large group of obese patients who are old enough, he will demonstrate some reduction in tolerance. We cannot define tolerance in terms of a curve on graph paper. Several cases would, according to the curve, make you believe the glucose tolerance was low. I have been able to carry one several days on a diet containing well over six hundred grams of glucose. She showed no sugar in the urine, and had a normal fasting blood sugar each morning, and yet her "sugar curve" was of a type supposed to indicate reduced sugar tolerance.

I think the fact that glucose tolerance curves do not show glucose tolerance would indicate that we are putting more reliance on the procedure

than is justified. I have yet to see a clinically obscure case made less obscure by the determination of a "sugar curve" with the exception of the two small groups, namely, renal glycosuria and hyperinsulinism.

The Uses of Ovarian 'Follicular' Hormone in Gynecology (Dr. C. G. Collins, Department of Gynecology): There are two hormones from the ovary that are used therapeutically: (1) Follicular hormone (theelin-progynone-amniotin); (2) corpus luteum hormone (progesterone). Time does not permit me to discuss the uses of both and I have selected three cases which are characteristic and responded to the treatment with the ovarian follicular hormone.

Case I. Mrs. A. C. W., aged 52 years, was first seen in the Department of Gynecology on December 5, 1937. The menopause occurred at the age of 42. Her complaint was a slight vaginal discharge, causing burning and itching. Examination showed senile vaginitis, cervix and uterus atrophic. Treatment consisted of douches, local therapy, theelin 2000 international units on December 16, 17, 18 and 20. The patient was markedly improved on January 4, 1938. Theelin is now given twice a week. The discharge is much improved.

With the menopause there is an atrophy in the ovary which is reflected in the vaginal mucous membrane. It later becomes thinned out and loses much of the glycogen content, these factors making it very susceptible to pyogenic organisms, the *Trichomonas vaginalis* organisms and yeast cells. Consequently, as in this case, the basis of all of our treatment of senile vaginitis, irrespective of the causative organism, is the follicular hormone 2000 international units in oil given intramuscularly three times a week. This causes the vagina to multiply in thickness; the cells begin to contain more and more glycogen; a normal bacterial flora is established, and the membrane assumes the characteristics of a woman during a normal sexual life. Vaginal smears and biopsy will prove this. To this basic treatment are added antiseptics and local applications dependent on the type of organism causing infection.

Case II. Mrs. M. C. C., aged 46 years, was first seen in the Clinic on June 28, 1937, at which time the findings were rectocele, cystocele, chronic endocervicitis, lacerated cervix, retrodisplaced uterus, and uterine fibroids. The patient was sent to hospital for operation, and returned to the Clinic November 11, 1937, five months after operation, with a history of nervousness, hot flushes since the operation and also occipital cervical headaches and vague joint pains. The patient was given bromides, 20 grains t.i.d., with no results. Theelin, 2000 international units, was then given three

times a week. On January 28, 1938, the patient was practically completely relieved of symptoms.

Following castration experimental animals show a marked hypertrophy of the anterior portion of the hypophysis, the formation of which can be prevented by the use of the follicular hormone following castration. Hypophyseal transplants from gonadectomized animals are more potent in stimulating the ovaries of immature animals than are hypophyses from non-castrated animals. In the woman, as in the experimental animal, similar changes are found following castration or the normal atrophy which takes place in the ovary at the menopause. Consequently, the follicular ovarian hormone which is antagonistic to the hypophyseal sex hormone in certain concentration is given at the menopause for the relief of the distressing symptoms, in dosages of 2000 to 10,000 international units three times weekly. Once the symptoms are controlled, the frequency and amount of dosage are decreased and, as the menopause is usually transitory, stopped altogether after a period of time.

Case III. Mrs. A. C. M., aged 42 years, was first seen in the Department of Medicine on October 13, 1937. Surgical menopause occurred 19 years ago following application of radium. In the Department of Medicine the only positive finding was accentuation of pulmonic second sound. Chest plate and electrocardiogram show no evidence of heart disease. The symptoms of which she complained in the Department of Medicine (palpitation, precordial soreness, dyspnea) improved by the use of phenobarbital. On January 10, 1938, the patient complained of soreness of the breasts, which started on December 11, 1937. She stated that she had been having these attacks for the past ten years, the soreness lasting five or six months. The breasts were slightly swollen and tender. There was no definite pathology palpable or visible. A consultation with the Department of Gynecology was requested, with a diagnosis of menopausal mastitis. The patient was first seen in the Department of Gynecology on January 13, 1938, at which time the patient's breasts were so tender that she would not allow a complete examination of the breasts. The diagnosis of menopausal mastitis was confirmed. Theelin therapy was instituted. After 8000 units of theelin, the patient had improved markedly, and on January 25, 1938, when last seen, she had very little or no tenderness in the breasts.

This is a case of mazoplasia of the breasts. The physiology involved is as follows: Injection of immature animals with the follicular hormone will cause proliferation of the ducts of the mammary gland; injection of the corpus luteum hormone and anterior pituitary extract will cause proliferation of the aciner portion. In these cases of painful

breasts, the majority show small tender nodules on the periphery of the breasts. Whether this is a result of hypophyseal overactivity or an oversupply of the corpus luteum is a moot question. Irrespective of which is the cause, we know that the follicular hormone given 2000 units per c.c., one c.c. at the time the patient's breasts become painful during her active menstrual life, or two or three times a week in the post-menopause cases, will produce relief of symptoms in a number of patients thus eliminating the necessity of mastectomy in a goodly number of women. The action of the hormone in this type of case is either by inhibition of the pituitary hormone or neutralization of any excess corpus luteum hormone that may be present. Hormone therapy is not necessary in all of these cases as a good uplift brassiere will relieve a certain number of these cases without any endocrine therapy.

LOUISIANA CONFERENCE OF SOCIAL WELFARE

At a meeting held in May, 1937, the discussion centered not around the lack of adequate provision for the care of patients chronically ill in the State, but stressed the difficulty of securing anti-luetic therapy in the parishes and also the prohibitive cost of transportation to and from New Orleans for those patients being treated at Charity Hospital. The discussors, and these were mainly connected with the State Department of Public Welfare, were interested in bringing these problems to the attention of the State Hospital Board in the hope that some of the money allotted for the construction of Charity Hospitals throughout the State could be used to provide anti-luetic therapy and transportation to and from New Orleans Charity Hospital. Since the conference is not an action body this suggestion was to be referred to the Gulf District of the American Association of Medical Social Workers for consideration and possible action.

Community Care of the Patient With Chronic Disease from the Viewpoint of the Medical Social Worker (Miss Louise Meyer, Social Service Department, Charity Hospital): The term chronic, as defined by a standard medical dictionary, means long continued, not acute. The major chronic diseases are: cancer, heart disease, osteomyelitis, tuberculosis, arthritis, diabetes, and certain nervous and mental diseases, but this discussion will be limited to only a few of these. In general, all of these diseases, as far as chronic care is concerned, present the same problems and difficulties, and these problems will be considered on the environmental level only. The emotional difficulties of the patient in adjusting to diagnosis and to recommendations will not be discussed.

Because life expectation is increasing and the age of the population is advancing, the medical social problems presented by chronic care are becoming more and more acute. In 1870, chronic diseases caused only one-fifth of all recorded deaths; they now account for more than half of the total mortality. Part of this increase is, of course, due to better keeping of records and to better diagnosis, but it does give some indication of the incidence and relative increase of chronic illness.

In an attempt to secure some idea of the extent of the local problem, the number of patients with chronic diseases referred to the Social Service Department, Charity Hospital, New Orleans, during March, 1937 was obtained. During this time, seventy-five from Louisiana were referred for social treatment. This number includes the new cases only, and does not take into account the patients referred during previous months who were still in the process of being treated socially. The more important problems, in arranging care for these patients, consisted of placing them where they would receive not only adequate and satisfactory care, but of establishing them in places with which both patients and relatives would be satisfied. Medical situations had to be interpreted to the relatives as well as to the patients; and, the patients had to be encouraged and helped to adjust to long time care in spite of little or no improvement in their physical condition. Unless there were adequate facilities in the community for nursing care, institutional placement, relief, boarding home care, and necessary medication, the situation was serious as far as the hospital was concerned.

Arranging for care for patients with chronic disease who are residents of Orleans Parish can be accomplished rather easily. Through the Child Welfare Association, excellent nursing care is available for those placed in their own homes or in boarding homes. If relief is needed and if the patients fail to qualify under Social Security classifications, institutional care can be arranged. The Home for Incurables accepts most patients with chronic diseases except cancer. Maison Hospitaliere is occasionally able to provide care for chronically ill patients, even patients with malignancy, if board can be paid. Touro-Shakespeare Home, which accepts white cases, and the Thomy Lafon Home, which accepts negroes, receive the bulk of institutional placement.

In the other sixty-three parishes, however, the situation is entirely different. No provision for nursing care, boarding home care, and institutional care for either white or negro chronic patients has been made. The plight of the negro chronically sick is even worse than that of white patients, because of poorer living conditions, lower wages, and

complete lack of resources within the relative group, and because there are at least ten colored to every white one. As far as the colored are concerned, if their immediate families or more distant relatives cannot provide care, the hospital has to continue to bear the responsibility. It is particularly difficult in the parishes to plan for the care of patients with cancer on account of the widespread fear that cancer is contagious.

From these illustrations it can be seen that it is not only difficult, and often ultimately impossible, but also time consuming to try to plan for the care of chronically sick patients in the parishes. The problems are, for the most part, the same. Relatives, regardless of how close, do not want to provide placement for anyone who needs special care. With the lack of any provision for boarding homes or institutional care in the community, unless relatives can be persuaded to take these patients there are no other possibilities of arranging care in the parishes. The lack of medical knowledge in the various communities makes it difficult to plan for some patients, particularly those with malignancy and tuberculosis, while further difficulty is encountered over division of authority. Very often, once a patient is admitted to Charity Hospital, the parish and relatives no longer feel any responsibility.

As care cannot be provided in Charity Hospital for patients with chronic disease, some formula must be worked out with the parishes. In this connection the following suggestions are offered:

1. Establishment of nursing service in homes. Could graduate nurses, married or unmarried living in the parish, be utilized, if necessary even on a volunteer basis?

2. Development of boarding homes in the parish. Because of the decided, although groundless, fear that cancer is contagious, this may be difficult to do as far as cases of malignancy are concerned, but it should be attempted. Could not graduate nurses in the community be interested in managing such boarding homes?

3. Use of a portion of the unfilled beds in private hospitals in the parishes. How well filled are these private hospitals? While they could not be expected to devote all of their empty beds, how many would they be willing to donate? Could the parish pay for this care even though the patient could not be classified under Social Security? Would the various hospitals provide care at the rate of \$30.00 a month, the maximum amount available under Social Security? Can this provision be made for negroes?

4. Is there any possibility of arranging for placement in Touro-Shakespeare Home or Thomy Lafon Home with the parish paying for care?

5. Should additional boarding homes in New Orleans be developed so that if placement in the

parish cannot be arranged, care in New Orleans would be possible? In the case of a patient with no close ties, this plan might work out very well.

Barring a state hospital for chronically ill patients, which is not at present and may never be feasible, it is not thought that the development of any one suggestion will solve the problem. But, with the promotion of all, the situation can be met to some extent and in a manner certainly more satisfactory to all concerned than it is at present. It is hoped that specific recommendations for immediate action directed toward solving the problem of community care of the chronic patient will be forthcoming from this round table discussion.

Community Care of the Patient with Chronic Disease from the Viewpoint of the Public Welfare Worker (Miss Anne Stille, State Department of Public Welfare): Since medical problems, both acute and chronic, are causing one of the most significant of the worries in the majority of the Parish Departments of Public Welfare, I welcome this opportunity to call attention to certain phases or aspects of the medical problems with reference to patients with chronic disease. As a matter of fact, it is, to my way of thinking, one of the most serious problems with which we have to cope. Why? First, because in a large number of Parish Departments of Public Welfare from 25 to 50 per cent of parish funds are being spent for medical needs for clients. In certain parishes, this percentage could, and would if additional funds were available, reach as high as 75 per cent. Why is this expenditure necessary? Because in a large number of our parishes no free hospitalization can be arranged; no free clinics are available; there are no convalescent homes; there are no Public Health Units; no attention through the Public Health Nursing Service is available; and also because in some instances the parishes do not have sufficient funds available to sponsor any one of these types of services. In addition to the above, most parishes are having, and have had, considerable difficulty in finding or in locating suitable boarding homes for patients who are chronically ill. In the majority of parishes, free hospitalization can be arranged only through Charity Hospital in New Orleans, Louisiana, and through Charity Hospital in Shreveport, Louisiana.

All cases of terminal cancer involve special arrangements and this type of case presents considerable difficulty in making the necessary arrangements for proper attention. Unfortunately, most patients with carcinoma wait too long before consulting a physician or before securing expert medical advice and in rural areas and also in cities, it is very difficult, and in many cases impossible, to persuade the client to consult a doctor or to

seek medical advice. Oftentimes, when the Parish Department of Public Welfare has arranged for an examination, the client refuses to submit to same, even after being taken to the physician's office, either because of fear or, in certain cases, from a false sense of modesty. Even after the proper treatment has been started it is very difficult, and also in many cases impossible, to persuade the client to continue the treatment advised. In brief, most patients refuse to consider or to consult a physician or to follow the doctor's recommendations until too late, that is, until after the disease has progressed too far to effect a cure or to benefit the condition very much, if at all.

As long as the patient can be sent—that is, as long as he is physically able to go for his treatment—transportation can be arranged and is being arranged and paid for by the Parish Department of Public Welfare. Unfortunately, however, increasingly large numbers of patients are being sent to charitable institutions for the various types of treatment and since this special type of case involves the arrangements for the patient's transportation and the consequent expenditure of parish funds for transportation so that the patient or patients can receive adequate treatment—as in practically all cases this cannot be arranged otherwise—an increasingly large amount of parish funds is being spent for transportation for these patients—that is, for their transportation to and from Charity Hospital. In addition, careful supervision of these cases and close follow-up is vitally essential. Our Parish Departments of Public Welfare are not equipped for this type of work as many field workers lack the medical-social worker's point of view and the resulting medical-social problems involved in such cases mean less to them.

When a cancer patient becomes confined to bed, another aspect of the problem presents itself. As the malignancy becomes gradually progressive, the patient suffers considerable pain in most cases and the physician, therefore, prescribes codeine and later morphine in increasingly large amounts. If, and when, morphine be administered by hypodermic, considerable care must be exercised in this connection. The drug must not be kept within easy access of the patient who, as the condition progresses, may have a tendency to "end it all" or "to put himself out of his misery." Also, the arrangement for the codeine and morphine, its administration and costs, must be borne by the Parish Department of Public Welfare since there are no free dispensaries or city clinics or health units through which either the codeine or morphine can be secured. Also in this connection, the services of a physician, and also usually an attendant or nurse, must be secured and

all expenses for each must be carried by the Parish Department of Public Welfare.

Patients with chronic osteomyelities present difficulties also and the problem becomes more and more complex, of course, in all cases where there is considerable involvement of the bones and tissues. Recently, in one of our parishes, we faced the many problems involved in handling this type of case.

Patients who suffer from heart disease likewise present special problems and the difficulty involved, of course, varies with the type of cardiac disease and the medical-social problem to be faced. Often there are many angles to these problems.

Diabetic patients present another exceedingly difficult problem since a special diet, which is expensive, must be followed rigidly, and in almost all cases insulin must be given which also is rather costly. Also, frequent examinations in the Out Patient Department or by a reputable physician must be arranged.

Pulmonary tuberculosis also presents many problems. To be sure, the Parish Departments of Public Welfare can arrange for free examinations in most instances by providing charity rate tickets at the expense of the Parish Departments of Public Welfare; but, after the diagnosis has been determined and after the doctor's recommendations have been made, the real difficulty begins. In cases of tuberculosis, hospitalization at Dibert Memorial, Charity Hospital, New Orleans, Louisiana, can be arranged very easily, but the ability to persuade the patient to undergo the treatment advised—whether medical, in which absolute rest in bed is essential; proper treatment, including pneumothorax, and also where a high caloric diet is given; fresh air, isolation, and all the factors of hygiene and sanitation carefully followed including cleanliness of the patient and his quarters and proper disposition of sputum—is extremely difficult. In case the treatment is surgical, even more difficulty is encountered in persuading the patient to undergo a phrenectomy or some form of thoracic surgery in order to collapse the lung and assist it in healing. Then, too, before the patient is ready to return home the family must be prepared for his coming, must be made to understand the disease; the necessity for rest, for various precautions, for frequent examinations and check up on the patient's condition; and also many other factors involved must be given attention.

If the patient refuses to enter the hospital, arrangements must be made for proper and adequate home care, whenever possible; medical attention must be arranged through a local physician; the members of the family must be periodically examined because of contact and their health safe-

guarded as closely as possible. Obviously, all this presupposes and necessitates the expenditure of considerable parish funds, requires follow-up and supervision which we are not equipped to give and since few, if any, Public Health Nurses are available in rural communities, the problem becomes more complex and rightly so, since this is a public health problem. Last month, in one parish, the field worker discovered a woman with advanced pulmonary tuberculosis living with her husband and six children, the youngest a baby of less than two years old, all crowded up in one room in an old barn. The Public Health Nurse, at our request, visited the home repeatedly, and continued the attempt to induce the mother to enter the hospital. After considerable time and effort had been spent, we succeeded in having all of the members of the family undergo examination for contact, arranged through Charity Hospital without charge—and fortunately all examinations and roentgen rays were negative except in the case of the baby who was found to have childhood tuberculosis. The proper diet and regime were instituted for the baby and also as many precautions as possible were taken to prevent the spread of the disease in the family; high caloric diets, including one quart of milk for each member of the family, have been given at the expense of the Parish Departments of Public Welfare.

CONCLUSIONS

I urge closer and more adequate supervision of all medical problems; closer cooperation between agencies and between doctors and social workers; also, a more comprehensive understanding upon the part of Parish Directors and field workers of the problems and factors involved in arranging adequate medical care and in carrying out the doctor's recommendations and advice as to treat-

ment and care. How can this be accomplished? Treatment through: (1) Classes—instruction in the principles and technic of case work; (2) education and instruction in medical-social problems and what problems are involved in medical cases—emphasizing certain phases of personality changes which accompany disease; (3) by conferences with other agencies; (4) by conferences with our local physicians; (5) by the addition of a well trained medical-social worker to our parish staffs; (6) by closer cooperation between agencies and medical institutions; (7) by the establishment of health units and free clinics; (8) by arranging for free local hospitalization; (9) by close follow-up and supervision through visiting nurses; (10) by the passage and observance of more strict laws pertaining to public health problems—particularly with reference to syphilis, gonorrhea, and tuberculosis; (11) through a more thorough education of our communities as to medical-social problems and of implications involved in their solution; (12) by the passage and strict observance of more adequate laws for the protection of children with reference to labor and care in the home; (13) by the establishment of convalescent homes, homes for the aged, and homes for incurables; (14) a more comprehensive understanding upon the part of the medical profession as to limitations in carrying out their recommendations. Whether we like to admit it or not, from 35 to 50 per cent of our cases present chronic medical problems and from 10 to 25 per cent of parish funds is being spent to arrange care for these cases. Also, if we could accept all of these patients, our total would reach 50 to 75 per cent of the entire case load as the larger parishes are having from six to ten chronically ill patients applying for assistance every day.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

- March 2. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- March 2. Mercy Hospital Staff, 8 p. m.
- March 2. Hutchinson Memorial Clinic Staff, 8 p. m.
- March 3. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- March 7. New Orleans Graduate Medical Assembly.
- March 7. Pathologic Conference, Hotel Dieu, 8:15 p. m.
- March 8. New Orleans Graduate Medical Assembly.
- March 9. New Orleans Graduate Medical Assembly.

- March 9. Clinical Pathological Conference, Charity Hospital and L. S. L. Medical Center, 2 p. m.
- March 9. Touro Infirmary Staff, 8 p. m.
- March 10. New Orleans Graduate Medical Assembly.
- March 11. French Hospital Staff, 8 p. m.
- March 14. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- March 15. Charity Hospital Medical Staff, 8 p. m.
- March 16. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- March 16. Charity Hospital Surgical Staff, 8 p. m.
- March 17. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

- March 17. Eye, Ear, Nose and Throat Club, 8 p. m.
- March 18. I. C. R. R. Hospital Staff, 12 noon.
- March 21. Hotel Dieu Staff, 8 p. m.
- March 22. Baptist Hospital Staff, 8 p. m.
- March 23. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- March 24. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- March 25. L. S. U. Faculty Club, 8 p. m.
- March 28. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- March 30. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- March 31. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of February the Society held one scientific meeting. The meeting scheduled for February 23 was dispensed with because of conflict with Carnival activities. At the meeting of February 14, the following program was presented:

SYMPOSIUM ON BRONCHIOGENIC CARCINOMA

1. The Medical Aspects of Bronchiogenic Carcinoma: Dr. Chaillé Jamison.
2. The Radiological Aspects of Bronchiogenic Carcinoma: Drs. E. C. Samuel, E. R. Bowie and A. D. Mayoral.
3. Bronchiogenic Carcinoma from the Standpoint of the Otorhinolaryngologist: Dr. H. L. Kearney.
4. The Pathology of Bronchiogenic Carcinoma: Dr. Bela Halpert.
5. The Surgical Treatment of Bronchiogenic Carcinoma: Dr. Alton Ochsner.

NEWS ITEMS

Members of the Society recently appointed to serve with the State Hospital Board are: Dr. James T. Nix, chairman and Dr. Rigney D'Aunoy, vice-chairman, of the medical group. Other members of this group are Dr. George S. Bel, Dr. Charles L. Brown, Dr. Joseph A. Danna, Dr. Robert A. Strong, and Dr. H. Vernon Sims. Dr. Leo J. Schoeny was made a member of the dental advisory group.

At the sixth anniversary of the opening of Flint-Goodrich Hospital, Dr. Urban Maes spoke. The secretary's report showed that during the past six years, 36,297 patients have been treated by the hospital.

Dr. A. J. Hockett was named secretary and Dr. Shirley C. Lyons a member of the board of the Hospital Service Association of New Orleans, which

organization now has a membership of 766 groups with 32,300 New Orleans' people protected by contracts.

"Heart Disease in Children" was Dr. Willard R. Wirth's subject when he spoke before the Pike County Medical Society January 6, at McComb, Mississippi.

Dr. Clyde Brooks and Dr. Neal Owens attended the Northwest District of the Medical Society of Alabama, January 21, in Tuscaloosa. Dr. Owens spoke on "Reconstructive Surgery of Facial Defects" at the Seventh District Medical Society at Jennings, La., and Dr. Jack Strange talked at the same meeting on "Immunization of Children."

Dr. John Taylor Halsey was made an honorary member of the Orleans Parish Medical Society, on January 24, 1938.

At the quarterly meeting of the North Mississippi Medical Society, February 2, Dr. John H. Musser spoke on "Coronary Occlusion: Its Diagnosis and Treatment" and on "The Treatment of Pneumonia." Dr. Robert A. Strong spoke on "Erythroblastic Anemia" and "Some of the Anemias of Children."

A symposium on "Disturbances of the Endocrine System" held February 2 at the Hutchinson Memorial Clinic Staff meeting included talks by Dr. L. C. Scott on "Probable Hypopituitarism;" Dr. Howard Mahorner on "Unusual Cases of Thyroid Disturbances"; Dr. C. R. Jones, Jr., on "Sugar Tolerance Test" and Dr. Conrad G. Collins on "The Uses of Ovarian 'Follicular' Hormone."

Attending the sectional meeting of the American College of Surgeons in Houston, February 2-4 were Drs. Alton Ochsner, Roy Wright, Michael DeBakey, James T. Nix, and Neal Owens. Drs. Ochsner, DeBakey, and Howard Mahorner had scientific exhibits at this meeting.

Dr. Thomas B. Sellers addressed the Chattanooga and Hamilton County Medical Society, February 3, on "Non-surgical Treatment of Gynecological Conditions," and on February 5 spoke before the Surgical Club of Birmingham on "Endocervicitis."

Dr. John T. O'Ferrall has been named a member of the orthopedic council of the National Foundation for Infantile Paralysis. In carrying on a national battle against infantile paralysis, this foundation, created under direction of President Roosevelt, will supplement the Warm Springs Foundation.

At the last meeting of the New Orleans Gynecological and Obstetrical Society, Dr. G. D. Royston, of Washington University, St. Louis, Mo., spoke on "Puerperal Complications," Dr. Earl Conway Smith discussed "Elliott Treatment of Pelvic Inflammatory Diseases of Women as used in Office or Private Practice" and Dr. Lucien A. LeDoux's subject was "Ruptured Hemorrhagic Ovarian Follicle Complicating Acute Appendicitis—As a Case Report."

Officers of the Hotel Dieu staff elected for the ensuing year are Dr. A. D. Mouledoux, president; Dr. C. Grenes Cole, vice-president; Dr. C. E. Gorman, secretary-treasurer; Drs. T. T. Gately, Frank Chetta, P. A. Kibbe, Walter Otis and D. J. Murphy, board members.

Dr. Henry B. Alsobrook was elected president of the Baptist Hospital staff, Dr. E. Z. Brown, vice-president, Dr. Robert H. Potts, secretary and Dr. Robyn W. Hardy, treasurer. Announcement was made by Dr. Louis J. Bristow, superintendent of the hospital, that the hospital commission of the Southern Baptist Convention has approved plans for increasing facilities of the Baptist Hospital so that additional nurses may be trained.

Dr. Mand Loeber was elected chairman of the Metropolitan Section of the National Council of Catholic Women.

Dr. John Oakley recently was appointed to the board of the New Orleans Travelers Aid Society.

At the recent annual meeting of the Tuberculosis and Public Health Association of Louisiana, Dr. W. H. Seemann was re-elected president and Dr. W. Harvey Perkins, first vice-president. Dr. Emile Naef was elected to the board and Dr. Robert Strong re-elected. At that time Dr. J. Arthur Myers, president of the National Tuberculosis Association, stated that thirty-eight years ago, 200 out of every 100,000 people died each year from tuberculosis, and that at the present time the number who die annually is only 60 per 200,000.

Dr. Florence Gilpin talked on "The Health Program and the School Board" at the meeting of the Henry W. Allen Elementary School Parent-Teacher Association.

TREASURER'S REPORT

Actual Book Balance: 12/31/37:.....	\$2,743.46
January credits:	\$3,541.59
Total Credits:	\$6,285.05
January expenditures:	\$1,742.89
Actual Book Balance: 1/31/38:.....	\$4,542.16

LIBRARIAN'S REPORT

During January, 150 volumes were added to the Library. Of these 14 were received by gift, 7 by purchase, 108 by binding and 21 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is given below.

The Library has loaned to doctors, during January, 1,077 books and journals, or about two to each member of the Society. An additional 947 have been loaned to students for overnight use, making a total of 2,024 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

Members of the staff have collected material on the following subjects during January:

Blood dyscrasias.
Weil's disease.
Influenza.
History of parasitology.
Melanotic sarcoma.
Cholera infantum.
Eugenic sterilization.
Sterols.
Manic depression.
History of anthelmintics.
Religion and mental hygiene.
Empyema.
Ischiorectal abscess.
Polycythemia.
Cobra venom in paralysis agitans.

NEW BOOKS

Clendening, Logan: Methods of Treatment, 1937.
Ormsby, P. S.: Practical Treatment of Diseases of the Skin.
Joslin, E. P.: Diabetic Manual, 1937.
Wilder, R. M.: Primer for Diabetic Patients.
Practitioners Library of Medicine and Surgery: Supplement, 1937.
American Surgical Association: Transactions, 1937.
Association of Life Insurance Presidents: Proceedings, 1931 and 1937.
Western Surgical Association: Transactions, 1933.
U. S. Army: Annual Report of the Surgeon-General, 1937.
U. S. Public Health Service: Annual Report of the Surgeon-General, 1937.
International Congress on Military Medicine and Pharmacy, 1937.
DuBois, E. F.: Mechanism of Heat Loss and Temperature Regulation, 1937.
Todd, M. E.: Thinking Body, 1937.
Shearer, E. M.: Manual of Human Dissection, 1937.
Markowitz, J.: Textbook of Experimental Surgery, 1937.

Drinker, C. K.: Not So Long Ago, 1937.
 Loewenberg, S. A.: Clinical Endocrinology, 1937.
 British Medical Journal: Endocrines in Theory and Practice, 1937.
 Farber, Sidney: Postmortem Examinations, 1937.
 Gantt, W. H.: Russian Medicine, 1937.
 Spiers, H. W.: Modern Treatment of Fractures, 1937.
 American Can Company: Nutritive Aspects of Canned Foods, 1937.

Franklin, K. J.: Monograph on Veins, 1937.
 Flexner, J. T.: Doctors on Horseback, 1937.
 Atkinson, D. T.: External Diseases of the Eye, 1937.
 Sutton, R. L.: Introduction to Dermatology, 1937.
 Koch, F. C.: Practical Methods in Biochemistry.
 Macleod, J. J. R.: Physiology in Modern Medicine, 1938.

Gilbert C. Anderson, M. D.,
 Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

THE 1938 STATE MEETING

To the Members of the Louisiana State Medical Society: In behalf of the members of the Orleans Parish Medical Society, I wish to call your special attention to the meeting of the Louisiana State Medical Society to be held in New Orleans May 2, 3 and 4, 1938, and invite you to make every effort to be present.

The committees in charge have arranged an excellent scientific program, and the social program promises to be up to the usual high plane.

We consider it a privilege to have the Society with us, and will look forward to a large meeting.

We expect and urge each of the guests to use the members of the Orleans Parish Medical Society freely during their visit here.

Sincerely yours,
 Shirley C. Lyons, M. D.,
 President.

New Orleans and the members of the Orleans Parish Medical Society extend greetings and a very cordial invitation to attend the meeting of the Louisiana State Medical Society to be held May 2-4 with headquarters at Roosevelt Hotel.

The scientific program is to be on new subjects carefully arranged so that one section will not interfere with the other. The program promises to be most interesting and will be discussed by leaders of the medical profession. In addition to this, ample time will be given to the general discussion so that everyone may express himself. Many of the essayists have new moving pictures and slides; these are most instructive. Much attention has been given to details which mean so much to the audience. Meeting rooms with excellent acoustics and lighting facilities will be used.

The committee on scientific exhibits is now arranging for one of the best if not the best that ever been presented here. The entire field of medicine, including the specialties, will be represented and few, if any exhibits, have been shown before. No one should miss this.

Our commercial exhibitors will show the latest in surgical instruments, medical books, drugs and pharmaceuticals. Some that you have been reading about can now be seen first hand, and with literature and reprints for the asking. Many local firms will have booths with us and will have on display numerous things of special interest to the medical profession.

The most talked of subject today is "State Medicine." What to do and how to do it is the question of the hour. Everyone agrees that "Organized Medicine" is the only solution and therefore we beg of you to attend this meeting better to acquaint yourself with something that may alter not only your future but that of many of those depending on you. At this time you will have the opportunity of talking this over, with not only the leaders in our state, but many from outside. Every doctor should be here to discuss this subject. It is your opinion and help that will solve the question and we must have your cooperation.

Plans are also under way to give something different in the form of entertainment. It is understood that a dance will be given Tuesday night for visiting members and their ladies in the Grand Ball Room. This will be after the President's Reception. I would like to say more about this but have been forced into secrecy. Of course, we will not forget our old friend golf. Several courses are now open, both private and public, and will be available Sunday and during the week. If you can spare any time from scientific meetings and the exhibits, there will be more than enough entertainment to keep you busy.

New Orleans today is an entirely different city from even two years ago, but I will not attempt to go into detail about the many interesting things to be seen. It is to be doubted if anyone has visited all places of interest unless he has exceeded the time usually spent in this way. Many of the things that may be viewed today have been completed within the past eighteen months. Others which might have been overlooked will be mentioned for your information. The new water purification

plant on Claiborne Avenue will be open to visitors; this is the largest of its kind in the world. There are many additions to Audubon and City parks, with their excellent golf courses, tennis courts, swimming pools, extensive improvements, flower beds, shrubs, and trees. The new stadium at City Park and the museums will be of interest to every one. Lake Shore Drive, with bathing beaches, extends for several miles along Lake Pontchartrain and affords, for the first time, a long, delightful ride where one may get a view of this beautiful body of water. Farther on is the new famous Shushan Airport. This is well-worth a visit. The rebuilt French Market, in which the old architecture as been retained, must be seen. Here one will find all kinds of fruit and vegetables, domestic and foreign; sea foods, flowers and many other things never found elsewhere. The Cabildo, which has just undergone a complete overhauling, is open daily with attendants to show visitors around. It will take about one week to go through this. The old St. Louis Cathedral, Jackson Square, and remodeled Pontalba Buildings are within easy walking distance. The always charming Vieux Carré is even more so now with its shops, both antique and modern, flower gardens, court yards and famous old houses and buildings. Many of these have been done over and present some very novel ideas.

Canal Street, the widest business street in America, with its brilliant lighting and many new stores is waiting to greet you. There are miles of new streets with beautified neutral grounds full of azaleas, camellias, shrubs, flowers and trees which bloom the entire spring and summer; many visitors travel hundreds of miles to view these and the many beautiful public and private flower gardens.

Fort Pike on Chef Menteur Highway has just been done over; also Chalmette National Park in St. Bernard Parish. Across the highway from this is the Skeet Club and National Guard Rifle Range. Close by is the largest sugar refinery and the banana wharves; farther down the highway will be found Packenham place with its famous oaks. A short distance from here on the east bank of the river, are the large orange groves. Some of the old rice and sugar plantations are still recognizable and, if interested and weather favorable, one may go a short distance to Austrica, in which place, a great part of the story "Green Margins" was written. Across the river are Old Fort Jackson and the real orange country of Louisiana. Returning to the city, it may be interesting to leave the main highway for the river road and see Belle Chasse. Nearby are docks of the Sea Train where several trains of cars are put aboard ships bound for American and foreign ports. Visitors are also cordially invited to inspect the United States Quarantine Station. But, I have mentioned so

many places that it will surely take weeks for you to see them all.

New highways have been opened from all sections. Today, even from the farthest part of the state, it is only a few hours, ride by automobile to New Orleans. Trains arrive and depart regularly. We will gladly furnish you with information and reservations. As this will be our best meeting, may not we have a "Doctors Take a Holiday" and then meet here for a most excellent time in every way. As no convention today is complete without your wife, she has of course been included in this invitation as you may have already surmised.

C. L. Peacock, M. D., Chairman,
Committee on Arrangements.

DR. HARRISON HONORED

Dr. Roy B. Harrison, one-time president of the Louisiana State Medical Society, was honored by being selected as president of the Federation of State Medical Boards in Chicago, February 5. For many years now as secretary of the State Board of Medical Examiners he has been largely responsible for many policies of the State Board. Always, Louisiana has had one of the outstanding boards of the country, which has been noted for its advanced stand on many of the problems of examining boards. Louisiana has been a leader and the man responsible for this leadership has been made president of the Federation of State Medical Boards as a recognition of his delightful personality and splendid executive abilities.

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society meeting was called to order by the president, on February 2, in the East Louisiana State Hospital at Jackson. Following a delicious dinner in the hospital dining room, the scientific session was held in the staff room. Drs. W. E. Kittredge and J. W. Warren, of New Orleans, were guests of the society, and read excellent and instructive papers. Dr. Kittredge gave a discussion of urinary calculi and presented an exhibit of different types of stones. Dr. Warren spoke on hemorrhoids and rectal fissure. Both subjects were discussed favorably by physicians present.

The next meeting of the society will be the first Wednesday in April at the East Louisiana State Hospital.

FIFTH DISTRICT MEDICAL SOCIETY OFFICERS

1938

President: Dr. W. H. Hamley, Lake Providence.

First Vice-President: Dr. E. O. Edgerton, Tallulah.

Second Vice-President: Dr. Ralph Talbot, Monroe.

Secretary-Treasurer: Dr. R. Morgan Simonton, Monroe.

RAPIDES PARISH MEDICAL SOCIETY OFFICERS

1938

President: Dr. D. C. McBride, Alexandria.

First Vice-President: Dr. I. F. Littell, Alexandria.

Second Vice-President: Dr. James Welch, Alexandria.

Secretary-Treasurer: Dr. J. A. White, Jr., Alexandria.

Delegates: Drs. H. O. Barker, Marion H. Foster, and J. A. White, Sr., all of Alexandria.

NEWS ITEM

Mr. E. Holt Gurney, President of the American Society of Heating and Ventilating Engineers, will speak on Thursday, March 3, at 8 p. m. at Gibson Hall on "Air Conditioning Brings Human Problems to the Engineer." This paper will deal with the effect of air conditioning on human health and should be of interest to the medical profession. Mr. Gurney is one of the outstanding ventilating engineers in the United States and Canada. During the World War he was Director of the Imperial Munitions Board from 1917-19.

The Eye, Ear, Nose and Throat Club had as its guest speaker, at the meeting on Wednesday, February 22, Dr. Arthur Q. Penta, Visiting Lecturer of Medicine, Temple University, and Lecturer on The Relationship of Oral Infection to Systemic Diseases, Temple University School of Dentistry. His subject was "The Oral Spirochetes and Associated Anaerobes in Pyorrhea and Pulmonary Suppuration."

Dr. Alton Ochsner, of New Orleans, will give the C. Jeff Miller Memorial Lecture at the Southeastern Surgical Congress in Louisville, Kentucky, on March 7. His subject will be "Thrombophlebitis." The lectureship honoring the memory of Doctor Miller was authorized by the Executive Council, June 18, 1936, for his contribution to surgery, his public benefactions and his untiring work for, and his interest in, the Congress.

Dr. Isidore Cohn, Professor of Surgery and Associate Director of the Department of Surgery, Graduate School, Louisiana State University Medical Center, attended a meeting of the Fracture Committee of the American College of Surgeons in New York City on February 15, 1938.

Dr. Cohn will be one of the guest speakers at

the Southeastern Surgical Congress in Louisville, March 7-9, and at the meeting of the Mississippi State Medical Society in April.

Dr. T. J. Dimitry attended the sectional meeting of the American College of Surgeons at Houston, Texas, February 2-4. He and Dr. John McReynolds of Dallas, Texas, conducted a symposium on the surgery of the pterygium.

Dr. Charles James Bloom, Professor of Pediatrics and Director of the Department, Graduate School, Louisiana State University Medical Center, was a guest speaker at the Arkansas Medical Society Postgraduate Assembly, which was held in Little Rock, on January 19 and 20, 1938.

Dr. John H. Musser addressed the Thirty-fourth Annual Congress on Medical Education and Licensure in Chicago, Tuesday, February 15. His subject was "The Training of the Future Internist."

Dr. Isadore Brickman has been appointed superintendent of the State Colony and Training School at Alexandria.

The Third Annual Postgraduate Institute, offering an intensive and interesting study of the Diseases of the Digestive Tract, will be conducted by The Philadelphia County Medical Society from March 28 to April 1 inclusive.

The medical staff of the Menninger Clinic will conduct its fourth annual Postgraduate Course on Neuropsychiatry in General Practice, April 25-30, inclusive, at the Menninger Clinic, Topeka, Kansas. The course this year will include a brief introduction to the fields of neurology and psychiatry and a specific application of this knowledge to the large group of cases of psychoneuroses, psychoses and psychogenic and neurologic disorders which every physician meets in his daily practice.

As in previous years, several guest speakers, prominent in the fields of neurology and psychiatry, will appear at the evening sessions of the course.

The Journal is in receipt of a letter from a young physician who would like a place in Louisiana (town or village of 2,000 or 3,000). He is licensed to practice in the State of Louisiana and has previously taught for four years at the Louisiana State University Medical Center.

There is need for a physician in Raceland, Louisiana, due to the death of Dr. W. J. Eroche, who practiced in that location for twenty-eight years. Mrs. Eroche has a drug store with doctor's office and waiting room available for physician in-

terested. Prefer young man who can speak French; however this is not essential.

There is an immediate opening for a physician in Monticello, Florida. Anyone interested please communicate with Richard H. Simpson, mayor of this town.

LEWIS MEMORIAL NIGHT

The Ernest S. Lewis Memorial Night on March 14, given by the New Orleans Gynecological and Obstetrical Society in joint session with the Orleans Parish Medical Society, is the outstanding meeting of the year.

Dr. Chipman is making a special trip from Montreal for this meeting, as it will be in memory of his very close friend, Dr. C. J. Miller. His subject will be John Hunter, the first scientific surgeon.

AMERICAN MEDICAL ASSOCIATION MEETING

Passenger traffic to San Francisco for the American Medical Convention June 13-17 will be very heavy from the southern states according to advice from A. C. Ziegen, District Passenger Agent of the Southern Pacific Lines. Special trains from Florida, Alabama and other states are being arranged and these trains will be routed via New Orleans and Southern Pacific, to leave New Orleans at 11:00 p. m. June 6 with short stop at San Antonio and two days at Los Angeles. In addition, the Southern Pacific is now making reservations on the regular California trains, the Sunset Limited and the Argonaut. Delegates can leave New Orleans as late as June 10 and arrive in San Francisco on the morning of June 13, the opening day. All arrangements are being made to cover the transportation features such as round trip railroad and Pullman tickets, special sight-seeing trips and National Park trips. Full information and complete itineraries will be prepared to fit each individual case upon application.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral, clinical and pathological examinations for all candidates (Group A and B) will be conducted by the entire Board, meeting in San Francisco, California, on June 13 and 14, 1938, immediately prior to the meeting of the American Medical Association.

Application for admission to the June 1938 Group A examinations must be on an official application form and filed in the Secretary's Office before April 1, 1938.

The annual informal Dinner and General Meeting of the Board will be held at the Palace Hotel, San Francisco, on Wednesday evening, June 15, 1938, at seven o'clock. Dr. William D. Cutter, Secretary of the Council on Medical Education and

Hospitals of the American Medical Association will be the guest speaker, and the Diplomates certified at the preceding days' examinations will be introduced individually. All Diplomates are invited to attend the dinner meeting, and to bring as guests their wives and any persons interested in the work of the Board.

For further information and application blanks address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces that in 1938 it will hold examinations in: San Francisco, June 13, during the American Medical Association; Washington, D. C., during the American Academy of O. and O. L.; Oklahoma City, November 4, during the Southern Medical Association.

Up to the end of 1937, the Board has held fifty-six examinations and had certified 1,498 ophthalmologists. The Board, on January 1, 1938, issued a new and complete list of physicians certified to date, arranged geographically. This list was mailed gratis to all certificated persons and to over two hundred and fifty hospitals and institutions.

The American Board of Ophthalmology has established a Preparatory Group of prospective candidates for its certificate. The purpose of this group is to furnish such information and advice to physicians who are studying or about to study ophthalmology as may render them acceptable for examination and certification after they have fulfilled the necessary requirements. Any graduate or undergraduate of an approved medical school may make application for membership in this Group. Upon acceptance of the application, information will be sent concerning the ethical and educational requirements, and advice to members of the Group will be available through preceptors who are members or associates of the Board. Members of the Group will be required to submit annually a summarized record of their activities.

Applications should be filed immediately. Required number of case reports must be filed at least sixty days prior to date of examination. Application blanks can be procured from: Dr. John Green, 3720 Washington Ave., St. Louis, Mo.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census reports that for the week ending January 15, there was a sharp increase in the number of deaths in the city as contrasted with that of January 8. Two hundred and three citizens of New Orleans expired in this week of whom 129 were white and 74 negro. Infant mortality was high as well; twenty-one deaths in infants under one year of age occurred at this time, divided 11 white

and 10 negro. There were 16 less deaths in the week ending January 22, largely as the result of 14 less negro deaths, there being 60 of these as contrasted with 127 white. Seventeen infant deaths occurred, of which 10 were in white and seven in negro babies. For the week ending January 29, the death incidence was approximately the same as the previous week, with a slight decrease to 122 deaths in the white population and increase to 70 in the negro. Twenty-one infants died this week, most of them being colored. For the last week for which reports are available, there was a total of 182 deaths, divided 109 white and 73 negro. Infant mortality was 12 only, two-thirds white and one-third negro. Apparently, the number of deaths in New Orleans this year is considerably higher than last year. So far for the first five weeks of the year, there were 927 deaths, whereas last year in the same period, there were only 825 residents of New Orleans who expired.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the third week of the year, ending January 22, syphilis led all other reportable diseases with 149 instances, followed by 69 cases of pneumonia, 30 of gonorrhea, 29 of pulmonary tuberculosis, 27 of cancer, 26 of influenza, 22 of scarlet fever, 15 of diphtheria and 14 of typhoid fever. Caddo and Orleans each reported four cases of typhoid fever. Of the unusual diseases, three cases of smallpox were reported, one in Beauregard, one in Caddo and one in Sabine Parish. Two cases of typhus fever were reported, one each in East Baton Rouge and St. Helena. There were also two cases of tularemia listed in this week. For the fourth week of the year, syphilis, as is its custom, led the reportable diseases with 203 cases, followed by 61 of pneumonia, 26 of gonorrhea, 22 of influenza, 19 of pulmonary tuberculosis, 16 of scarlet fever, 13 each of cancer and chickenpox, and 10 of diphtheria. Other diseases, not occurring in figures greater than 10, are not listed in these notes. It is interesting to observe that there were three cases more of tularemia reported and another of typhus fever, again from East Baton Rouge. One case of poliomyelitis originated in Orleans Parish. There was a considerable drop in syphilis and pneumonia, which led the other listed diseases for the previous two weeks, in the week ending February 5: syphilis fell to 78 and pneumonia to 51 cases. There were as well reported 29 cases of pulmonary tuberculosis, 24 of influenza, 16 of cancer, 15 of scarlet fever, 14 of gonorrhea, 12 of diphtheria and 11 of typhoid fever. Five of these typhoid fever cases were from Caddo, two from Franklin and two from Lafayette.

Of the rare diseases, there were two cases of undulant fever on the list, one each from East Baton Rouge and St. James. The number of cases of syphilis jumped up to 190 in the week of February 12, and pneumonia increased to 60 cases. There were listed as well 44 instances of influenza, 38 of pulmonary tuberculosis, 23 of chickenpox, 19 of whooping cough, 16 of cancer, 14 of scarlet fever, 11 of gonorrhea and 10 of pellagra. Orleans Parish reported a case of leprosy and one of paratyphoid fever, while Madison had a new case of tularemia.

HEZZIE D. BULLOCH, M. D.

Dr. Hezzie Donice Bulloch, died at his home in Covington on January 31, 1938, from coronary occlusion. He was fifty-three years of age. He had been ill for the past three years and retired from active practice, but was very active in both parish and state medical societies.

Dr. Bulloch was graduated in medicine in 1903 from the Medical Department of the University of the South at Sewanee, and, upon graduation, practiced in Washington Parish, later moving to Folsom and then Covington. He was one of the charter members of the St. Tammany Parish Medical Society when it was organized in 1903. On two different occasions he was elected and served as president of the parish society. For many years he was secretary-treasurer and this office was always unanimously voted to him because of his efficient service.

Dr. Bulloch married Miss Elizabeth Verna Brazelton of Sewanee in 1903. He is survived by his father, wife and one son, Donice Bulloch, and four grandchildren.

He was a 32nd degree Mason and a Knight Templar, and was very active in Masonic circles. He served as Coroner of St. Tammany Parish for over seventeen years. Dr. Bulloch was noted for his geniality, sincerity, friendship and lovable character, as well as his ability as a physician.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

FLASH!

IMPORTANT TO ALL AUXILIARY MEMBERS!

The dates of the annual meeting of the State Society to be held in New Orleans have been changed from April 25-27 to May 2-4, 1938.

Plans for the above meeting are well under way now, and under the very able guidance of Mrs. S. Chaille Jamison, Chairman, a very interesting and pleasant time and a very cordial welcome awaits visitors to the convention. Do plan to attend. Following is the tentative program:

ANNUAL MEETING

Headquarters

Roosevelt Hotel

Registration Desk—Lobby, First Floor

Mrs. S. Chaille Jamison.....General Chairman

Mrs. Shirley C. Lyons.....Vice-Chairman

HONORARY COMMITTEE

Mrs. Joseph A. O'Hara Mrs. George D. Feldner

Mrs. Jules Myron Davidson Mrs. C. Grenes Cole

COMMITTEES

Registration.....Mrs. C. Grenes Cole

Information.....Mrs. J. W. Warren

Tickets.....Mrs. Paul G. Lacroix

Printing.....Mrs. Isidore Cohn

Publicity.....Mrs. S. M. Blackshear

Exhibits.....Mrs. Jerome Landry

Transportation.....Mrs. Cassius L. Peacock

Telephone.....Mrs. Donovan C. Browne

Style Show.....Mrs. Jules Myron Davidson

Luncheon.....Mrs. William Kohlman

Breakfast.....Mrs. George Taquino

Tea.....Mrs. Edgar Burns

Flowers.....Mrs. Daniel Silverman

PAGES

Mrs. C. P. Cabibi Mrs. Bernard G. Efron

Mrs. Guy Caldwell Mrs. John S. Herring

Mrs. Charles R. Hume

PROGRAM

Monday, May 2, 1938

Registration.....Local Women

8:00 p. m.....Open Meeting

Tuesday, May 3, 1938

10:00 a. m. Pre-Convention Executive Board meeting, Roosevelt Hotel, Mrs. George D. Feldner, President, presiding.

Invocation.

12:30 p. m. Luncheon and Style Show, Blue Room, Roosevelt Hotel, Toastmistress, Mrs. S. M. Blackshear.

8:00 p. m. Open meeting and President's Reception, Roosevelt Hotel.

Wednesday, May 4, 1938

9:00 a. m. Breakfast.....Rose Room, Jung Hotel

10:30 a. m. General Session of Auxiliary, Mrs. George D. Feldner, President, presiding.

Invocation.

Welcome Address: Mrs. H. Theodore Simon.

Response to Address of Welcome: Mrs. Roy Carl Young.

"In Memoriam": Mrs. Hermann B. Gessner.

Reading of the Minutes.

Reports:

State Officers.

State Committees.

Parish Auxiliaries.

Special Committees.

Report of Woman's Auxiliary to American Medical Association.

Report of Woman's Auxiliary to Southern Medical Association.

Unfinished Business.

Recommendations of Executive Board.

New Business.

Report of Nominating Committee.

Election of Officers.

Introduction of New Officers.

Announcements by New President:

Mrs. Frederick G. Ellis.

Adjournment.

2:00 p. m. Post-Convention Executive Board Meeting, Roosevelt Hotel, Mrs. Frederick G. Ellis, President of Auxiliary to Louisiana State Medical Society, presiding.

4:00 p. m. Tea—New Orleans Country Club, in honor of Mrs. Frederick G. Ellis, President, Woman's Auxiliary to Louisiana State Medical Society.

ATTENTION LADIES!

The above-mentioned style show is being given through the courtesy of Gus Mayer Co., Ltd. Do not purchase your summer wardrobe until you have seen this show!

OUACHITA PARISH

The Woman's Auxiliary to the Ouachita Parish Medical Society held its regular monthly meeting Wednesday, February 9, at the Lotus Club. A class for the board members was organized in parliamentary procedure, and was well attended. Mrs. A. D. Tisdale is conducting the class.

The Chairman of Hygeia reported that twenty-nine subscriptions had been obtained, this being the largest number that Ouachita has ever reported.

A contribution was made toward the memorials of two of our beloved members, Mrs. Sadler and Mrs. Yancey.

Dr. Byron Vaughan gave an enlightening discus-

sion on "Socialized Medicine," a subject which is being greatly discussed at the present time. Mrs. A. D. Tisdale's review of "The Citadel" by Cronin was most interesting as well as educational.

Plans were discussed for the celebration of "Doctor's Day" in March.

Mrs. DeWitt T. Milam,
Publicity Chairman.

ORLEANS PARISH

The February meeting of the Woman's Auxiliary to the Orleans Parish Medical Society was held on Wednesday, February 9, at the Orleans Club with a very large attendance.

Plans were formulated for Doctor's Day, which promises to be an unusually gala event in the form of an Italian dinner, in the beautiful new Tulane Room at the Jung Hotel on Wednesday, March 30, at eight o'clock, with a good dance orchestra and floor show. All members of the Parish Society are invited to attend.

Miss Jessie Tharp read a most interesting play, "Yes, My Darling Daughter."

The Tuberculosis Committee, of which Mrs. Hermann B. Gessner is chairman, is doing outstanding work in health education. The work began with some excellent publicity in the New Orleans Item which included a large picture of our poster. This article was also translated and carried out in its entirety in the Italian paper "La Voce Coloniale."

The posters bearing our message have been placed throughout various department stores, banks, insurance companies, mills, as well as public, private and parochial schools in the city. Speakers have been appointed from the Parish Medical Society by the president. It is through specially selected men that this information is disseminated to groups of people all over the city. The moving pictures are furnished through the National Tuberculosis Society to accompany these interesting lectures. We want to take this means of thanking the various doctors who have given their valuable time to speak for us, and also the many doctors who have lectured on social hygiene as part of our educational program. The committee is composed of Mesdames Gessner, J. W. Warren, Ernest Faust, Chapman Reynolds, J. N. Ané, William J. Healy, W. H. Harris, H. J. Schattenberg, J. E. Isaacson, Joseph LaNasa, Mannie Mallowitz, and Jules Myron Davidson.

Mrs. S. M. Blackshear,
Publicity Chairman.

An Executive Board meeting of the Woman's Auxiliary to the Louisiana State Medical Society was held in New Orleans on Wednesday, February 16, at the Roosevelt Hotel. The President reports many interesting and important questions were discussed and action taken thereon.

Mrs. Lucian W. Alexander, Chairman,
Press and Publicity.

BOOK REVIEWS

The Therapeutic Problem in Bowel Obstruction:
By Owen H. Wangenstein, B.A., M.D., Ph.D.
Springfield, Charles C. Thomas, 1937. Pp. 360.
Price \$6.00.

This is an excellent book written by a worker who, greatly interested in intestinal obstruction, contributed much through personal observations and investigations in this field. In presenting the therapeutic problem in bowel obstructions so thoroughly, as does the author of this book, the scope of the work actually exceeds the limitations indicated by its title, for, in developing the therapeutic indications, the important physiologic and pathologic changes occurring in intestinal obstruction are portrayed extensively. This volume might well be read by internists as well as surgeons.

AMBROSE H. STORCK, M.D.

International Clinics: Vol. III, September, 1937.
Philadelphia, J. B. Lippincott, 1937. Pp. 328.
Price \$2.50.

This volume contains medical clinics at the Johns Hopkins Hospital in addition to excellent articles dealing with several aspects of tuberculosis and

syphilis. Essays pertaining to diseases of the heart, lungs, circulation and the endocrines are both interesting and important in their timeliness, with references to present day problems in medicine. To the members of the local profession there is an article entitled, "Diabetes—What of the Future," by the late Dr. I. I. Lemann.

I. L. ROBBINS, M. D.

The Laboratory Diagnosis of Syphilis: By Harry Eagle, M. D. St. Louis, C. V. Mosby Company, 1937. Pp. 440. Price \$5.00.

Ever since Bordet first described the phenomenon of complement fixation and Wassermann applied it to the diagnosis of syphilis, volumes have been written about the serologic diagnosis of lues. Again another book is added to the well stocked bibliography on the subject, but this time Dr. Eagle's book is a very valuable addition.

The material in this book has been well arranged; it is divided into six parts and several appendices. The Wassermann reaction, the flocculation tests and the examination of the spinal fluid are discussed in detail; the common sources of error

are not only pointed out to the serologist, but also means of avoiding them are described. The clinical evaluation of the serologic report comprises an important section; it is this part which should be of value to the physician.

There is scarcely a serologic test that is so widely used as the Wassermann reaction in the diagnosis of syphilis. It is an everyday word to thousands of practicing physicians and laboratory workers, but few of them know how it works, its pitfalls and its limitations. Dr. Eagle's book gives, in a few hundred pages, the most complete, thorough and simple way of understanding the serology of syphilis.

ALBERTO PRIETO, M. D.

Tumors of the Nervous System—An Investigation of the Most Recent Advances: By The Association for Research in Nervous and Mental Disease. Baltimore, Williams and Wilkins Co., 1937. Pp. 493. Illus. 213. Price \$7.50.

This is the sixteenth volume to be published by the Association for Research in Nervous and Mental Disease since 1920. In Chapter I, Bland and Russell describe the culturing of cells from three types of cerebral gliomas. The growth and behavior of these cells were recorded and studied by means of motion pictures. In the next two chapters, Wortis deals with the metabolism of nervous tissue, and Victor and Wolf report on the metabolism of nervous tissue, and Victor and Wolf report on the metabolism of brain tumors. Weil and Liebert present their initial studies on the antigenic properties of brain tumors in the fourth chapter. In Chapter 5, Frazier and Alpers record the results of a symposium on the irradiation of gliomas: Medulloblastomas are the most radiosensitive of the glioma group; the astrocytomas and ependymomas respond to a lesser degree; it is concluded that most tumors have received inadequate dosages. Elvidge, Penfield and Cone present a detailed study of 210 cerebral gliomas and suggest some changes in classification. In the seventh chapter, Kernohan and Fletcher-Kernohan give an histologic analysis of 109 ependymomas which occurred in the nervous system or in the hollow of the sacrum. In the next division Globus propounds a theory on the origin of meningiomas and recommends a simpler classification. Chapter 9 by Alexander deals with tumors and cysts of the cerebellopontine angle. Fremont-Smith writes the next section on the cerebrospinal fluid in brain tumor. He emphasizes the danger of lumbar puncture in patients with obvious brain tumor and points out that there is no single spinal fluid picture which is characteristic of cerebral neoplasm. In the eleventh chapter Elsberg briefly describes his new method of olfactometry and its application to the localization of brain tumors. Four of the remaining chapters

(Dyke, Davidoff, Waggoner, Lowenberg, Stout, Laidlaw, Haagensen, Adair and McLean) are studies of tumors of the peripheral nerves and of the brain. Chapter 14 by Eisenhardt on the survival period in cases of brain tumor is the most interesting in the volume to readers not directly concerned with neurology. The author has followed the patients operated upon by Cushing and finds 503 who have survived at least five years, the longest survival period being twenty-eight years.

DEAN H. ECHOLS, M. D.

Physiological Chemistry of the Bile: By Harry Sobotka. Baltimore, Williams & Wilkins Co., 1937. Pp. 202. Price \$3.00.

This book of 202 pages is divided into eight chapters covering the subjects of hepatic secretion, the quantity of bile secretion; the composition of bile divided into three chapters, one on the bile acids, another on other normal constituents, and a third on detoxication; one on the modification of bile flow as affected by various injections, one on the occurrence of bile acids outside the biliary tract, and a final one on the effects of bile acids as functions of their presence in the digestive tract. There is an adequate index and a bibliography of about 1200 references.

The appearance of this review of the literature is timely. There is a growing appreciation of the importance of the phenanthrene nucleus as a structural unit common to a wide variety of substances related to the growth processes, and an assembling of widely scattered publications in a field such as this is a welcome service.

It should be noted that the author has presented more of a survey of the literature than a critical appraisal of it. It is to be followed immediately by a companion volume on the chemistry of the sterids, which will complement the present volume and in a sense complete it.

SIDNEY BLISS, M. D.

Neurology: By Roy R. Grinker, M. D. Springfield, Ill., and Baltimore, Charles C. Thomas. 1937. Pp. 999. Price \$8.50.

The first edition of this work appeared three years ago. It proved of distinct value. This, the second edition, is equally welcome and will be found of greater value.

It is to be noted that the title of this work is "Neurology." We have had in the past and have at the present time many volumes entitled "Text-book of Nervous Diseases," "Clinical Neurology," "Diagnosis of Nervous Diseases," many of them excellent books treating the subject of neurology in one or other of its fields of interest. None, however, presents the views of modern clinical neurology, as a whole, as does the present volume. It

does not satisfy itself with the descriptions of signs and symptoms of nervous diseases, the location of the lesions and probable pathologic changes in their explanation, but it takes a much broader view of neurology and presents it as a part of biologic data, which are considered of importance to the study of the human nervous system in health and disease. It will help the student to appreciate more and more the relationship between structure and function and finally help him to visualize human nervous functions and their disorders better because the effects of diseases, as herein presented, are based on disordered morphology and physiology.

Anatomic, embryologic and physiologic considerations introduce the subject of many of its thirty chapters. The varied and difficult pathways are made clear by numerous diagrams. More than four hundred illustrations are found within its covers. They are original, clear and many picture the extensive clinical material from the author's clinics in the University of Chicago. Apart from an extensive index, the end of each chapter is followed by numerous references in the literature of the subject treated. Chapter seventeen on intracranial tumors is followed by as many as one hundred and twenty references. All of this adds considerably to the value of the work, which presents a most comprehensive view of modern neurology.

The publishers are to be congratulated on the quality of the materials used in this volume and the clearness of the illustrations and types.

L. L. CAZENAVETTE, M. D.

A Textbook of the Practice of Medicine: By various authors, edited by Frederick W. Price, M. D., C. M., F. R. C. P., F. R. S. (Edin.). London, Oxford University Press, 1937. Pp. 2038. Price \$12.50.

This is an excellent textbook, containing accurate and remarkably complete accounts of most of the medical diseases. Its completeness, as well as the inclusion of hundred-page sections on diseases of the skin and psychologic medicine, necessitates the use of small print and thin paper to get all of the material into a single volume; even so, the book is of excessive thickness, containing more than 2000 pages. The section on skin diseases, void of illustrations, might well have been omitted.

A good feature is an introductory discussion which precedes the description of individual diseases in most of its sections. Thus, a general discussion of infection, immunity and immune therapy precedes the description of the infectious diseases; a short discussion of the vitamins is placed at the beginning of the section on deficiency diseases; and a brief discussion of anatomy, physiology and methods of examination occurs at the beginning of each section dealing with diseases of

the different organs and systems. Functional disorders, so often neglected in textbooks of medicine, are sufficiently emphasized.

This book is singularly free from the inaccuracies which often creep into single volume texts that include a great amount of material. A proper balance between space allotted to discussions of diseases has been the basis for the number of words devoted to their description. For the most part, all of its sections are up-to-date, though conservatism apparently has been the authors' policy regarding the inclusion of new methods of treatment.

This book can be recommended to the general practitioner and internist as a well written, accurate and complete textbook. The large amount of space devoted to subjects which lie within the scope of other departments probably renders it less desirable than other texts for use by the Departments of Medicine in undergraduate schools.

EDGAR HULL, M. D.

Malaria: By Bernard Nocht, M. D., and Martin Mayer, M. D. London, John Bale, 1937. Pp. 196. Price 10/6.

This is the first English edition of the small handbook on malaria by Professor Bernard Nocht and Martin Mayer, of Hamburg, Germany, and is about as complete a treatise of the subject as could be presented in any book of this size, 188 pages.

The whole subject is brought right up-to-date. One will easily find here, in concise form, practical information in answer to most of the questions that arise in dealing with malaria in practice.

C. C. BASS, M. D.

The Traffic in Health: By Charles Solomon, M. D. New York, Navarre Publishing Co., 1937. Pp. 393. Price \$2.75.

This is a book that is written primarily for the laity but which should afford a tremendous amount of interest and information to the medical man. The author presents such subjects as the problem of the patent medicine racket and what to do about it; he discusses habit-forming drugs and he comments rather extensively on "the lunacy of the diet fads." Succeeding chapters have to do with such things as "the habits and customs of the digestive tract" in which he presents clearly and concisely the importance of not making use of, this of course to the laity, expensive cathartics most of which cost about one cent a pound and sell for a hundred times that price. Probably one of the most interesting chapters to the female reader would be that upon "the cosmetic urge—your face is your fortune." Solomon elucidates the dangers that lie in many of the face creams, depilatories, hair dyes, eyelash tonics, bust developers and so on. He

shows that some of the well-known massage creams for example which may sell at \$3 cost actually about fourteen cents. The two concluding chapters are short and concise. In the next to last is given the information, what to do until the doctor comes, and in the last chapter he summarizes the material that has gone before.

This book can be recommended by the physician to his patient without any qualms. The intelligent individual reading what Solomon has to say would put the book down firmly convinced in his or her mind that never again would he buy patent medicine or products which are advertised extensively with unsubstantiated claims. The book is easy to read, written in a racy, colloquial style which helps to maintain interest. The volume would be a good one for the doctor to have in his office as a reference book because no doubt frequently patients will ask about this or that patent medicine. Referring to the index the physician will find that he can give the information which is desired but which would not be the information on the cover or the container of the substance in question.

J. H. MUSSER, M. D.

Diagnosis and Treatment of Sexual Disorders in the Male and Female: By Max Huhner, M. D. Philadelphia, F. A. Davis, 1937. Pp. 490. Price \$5.00.

In reading through the book of "Sexual Disorders" by Max Huhner, M. D., one could not help but be impressed that things are brought out in this book which have been so secretly guarded, even in medical literature. The general misunderstanding of sexual disorders is due more to practitioner's ignorance of the condition, as here is brought out that these conditions are of pathologic or psychic origin or a combination.

This book should be read by the gynecologists, urologists, and psychiatrists in order that they may get a clear understanding of sexual disorders so that they may be treated intelligently as to the cause and treatment.

Dr. Huhner noted time and time again that in the male there was congestion in the posterior urethra and prostatic gland and also there was noticed that the verumontanum showed some pathologic change. In the treatment of this he recommended rest, both physical and sexual, gentle massage of the prostatic gland and sounding and installation of a weak solution of silver nitrate in the posterior urethra.

FRANK L. RAMSAY, M. D.

Eyestrain and Convergence: By N. A. Stutterheim, M. D. (Rand). London, H. K. Lewis and Co., Ltd. 1937. Pp. 89. Price 7s/6d.

This volume of some ninety pages, which is written by a Dutch ophthalmologist in South Africa, presents the author's views regarding the relation-

ship of eyestrain to convergence and his method of treating convergence dysfunction. He believes that convergence is an automatic power of the mind and different from all other forms of ocular movement. He thinks that the internal recti and all the oblique muscles are in constant action during sight. In his opinion, the symptom complex which we call eyestrain is almost entirely due to defective mental and physical convergence. His remedy is a modified series of prism exercises which he calls kenetic treatment.

In my opinion, the author has really overestimated the importance of convergence insufficiency which is only one of a dozen fundamental variables that cause the symptom complex called eyestrain. It is difficult properly to evaluate these many and diverse variables and it is possible that the variables which predominate in South Africa are of lesser importance in America. From an American point of view, the accurate correction of especially cylindrical refractive errors seems more important than the exercising of slight convergence insufficiencies. We are inclined to regard slight heterophoria like ancestors, something we all have a little of, but about which little can be permanently done. In the treatment of functional ailments, two fundamentals of psychotherapy, the confidence in recovery and the urge to get well, play an important part. I wonder whether the same exceptional results which Dr. Stutterheim has obtained in relieving patients of their eyestrain have not been equalled by others with different forms of treatment, including psychotherapy.

In conclusion, the enthusiastic efforts of the author make this little volume well worth reading even though his ideas are somewhat at variance with those generally held in this country.

CHARLES A. BAHN, M. D.

PUBLICATIONS RECEIVED

P. Blakiston's Son and Company, Inc., Philadelphia: Practical Bacteriology, Haematology and Animal Parasitology by E. R. Stitt, M. D., Sc. D., LL. D., Paul W. Clough, M. D., and Mildred C. Clough, M. D. A Textbook of Hematology by William Magner, M. D., D. P. H.

The Commonwealth Fund, New York City: Maternal Deaths—The Ways to Prevention by Iago Galdston, M. D. A Pediatrician in Search of Mental Hygiene by Bronson Crothers, M. D.

Duke University Press, Durham, N. C.: The Compleat Pediatrician by W. C. Davison, M. A., D. Sc., M. D.

Lea & Febiger, Philadelphia: X-rays and Radium in the Treatment of Diseases of the Skin by George M. Mackee, M. D.

William Wood and Company, Baltimore: Treatment of Some Chronic and "Incurable" Diseases by A. T. Todd, O. B. E., M. B. (Edin.) M. R. C. P. (Lond.).

New Orleans Medical

and

Surgical Journal

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No. 10

CANCER

A SYMPOSIUM*

MALIGNANCY OF THE CENTRAL NERVOUS SYSTEM†

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NEW ORLEANS

BRAIN TUMORS

The devastating results of tumors of the brain are generally comprehended, but the layman, and even many physicians, do not seem to realize that such new growths are relatively quite frequent. Large series of autopsies have shown that tumors of the brain are responsible for about 1 per cent of deaths from all causes, which establishes the brain as one of the commonest sites for new growths. The importance of including brain tumors in any discussion of malignant neoplasms is therefore obvious.

Many brain tumors, of course, are benign. Meningiomas, neuromas and pituitary adenomas present a fairly hopeful prognosis, as do approximately 60 per cent of all gliomas. But 40 per cent of all brain tumors are gliomas of varying degrees of malignancy, and about 40 per cent of this group are of such a high degree of malignancy that in most cases they strike swiftly and march on relentlessly to an early and fatal termination.

The keynote of the successful treatment of all brain tumors, whether benign or malignant, is early diagnosis. If untreated, almost all of them will sooner or later cause an increase in intracranial pressure which renders surgery in-

finitely more difficult and dangerous and places the patient's life in great jeopardy, not so much because of the growth itself as because of the factors of danger inherent in the increased pressure.

How is early diagnosis to be achieved? Not, I would say, by reliance upon the classic triad of headache, vomiting and choked disc. Those three manifestations are intimately associated with brain tumor in the minds of all physicians, but if early diagnosis is to become an accomplished fact, that old conception must be supplemented with another. Brain tumor must be suspected as the underlying cause of any progressive and which cannot be otherwise explained. It should be emphasized, too, that the classic triad of headache, vomiting and choked disc, although it is a syndrome diagnostic of increased pressure only, regardless of its cause, should always be regarded as a sign of brain tumor until brain tumor is excluded, for it is most commonly caused by new growths.

* SYMPTOMS

The headache of brain tumor is not distinctive or absolutely typical, but it does have special characteristics of its own. It is apt to come on early in the morning, even waking the patient from sleep, and to wear off as the day goes on. It is apt to become progressively worse, both in frequency and severity, and to derangement of neurologic function which is aggravated by sneezing, coughing and straining at stool. It is also resistant to usual remedies. Vomiting is apt to occur when the headache is worse. It may or may not be associated with nausea, and it may be entirely independent of food and drink. Projectile vomiting, contrary to the general belief, is a late sign and is not often seen.

Choking of the discs is diagnosed by ophthal-

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moscopic examination, which is part of the routine examination of the eye, which, in turn, is an indispensable feature in the study of suspected brain tumors. There may be dimness of vision, although high choking is not incompatible with good central vision and study of the eye may also reveal pupillary changes, diplopia, nystagmus, ptosis and various field defects.

Other common findings in brain tumor are muscular twitchings, convulsions, weakness, paralysis, changes in mentality and personality, vertigo, hallucinations, awkwardness, incoordination and sensory changes. Convulsions are particularly significant, especially if they have their onset in adult life, for many brain tumors first announce their presence by a convulsion. Such causes as hemorrhage, thrombosis, embolus, syphilis, uremia and hypoglycemia usually indicate their presence by other signs; when these and other causes have been excluded, brain tumor is a more acceptable working diagnosis than idiopathic epilepsy, for most of these cases, when followed to their conclusion, prove to be neoplastic. It must be remembered that there are innumerable other leads pointing toward tumor which are not discussed here because of the limitations of time.

DIAGNOSIS

Having suspected the presence of a brain tumor prior to the onset of greatly increased intracranial pressure, how are we to proceed to establish the diagnosis? The first recommendation is purposely mentioned first, for it cannot be too strongly emphasized. Detailed, careful, repeated physical examination is the first essential of diagnosis. The findings may vary from day to day, as new signs appear, and particularly new eye signs. Repeated physical examination, accompanied by a chronologically detailed history, is the most important consideration of early diagnosis.

Spinal puncture is a rather general practice but it has inherent dangers, especially in the presence of increased intracranial pressure, as evidenced by choked discs. In early cases, before the onset of increased pressure, it is generally considered safe. In late cases, in spite of its dangers, it may be necessary for a differential diagnosis, but each case must be considered on

its individual merits. When it is employed, it must be done carefully and slowly.

Roentgen ray examination, when performed with the proper technic and when competently interpreted, may be of enormous value. It may reveal evidence of general pressure, various localizing signs, and even calcification in the tumor itself. A normal picture is also helpful, in that it excludes certain typical and practically constant changes and so assists in eliminating the diagnosis of some types of brain tumors. If a definite diagnosis cannot be established by other methods, the roentgen ray may be employed again after the cerebrospinal fluid has been replaced by an opaque medium, usually air. The exchange is made by lumbar puncture or, if there is evidence of increased intracranial pressure, by puncture of the ventricles.

Other diagnostic methods are now in process of investigation but are not yet generally practiced. The roentgen ray, for instance, can be used again to photograph the cerebral vessels after the introduction of opaque media into the carotid artery. This procedure requires maximum skill and a nimble technic for its successful performance, while the interpretation of the radiograph is equally delicate. The principles employed in electrocardiography, again, are being used in the study of brain diseases. Berger rhythm is a change in electric potential flowing through the brain in rhythmic waves which can be traced and measured. The normal curves and the curves found in various abnormal conditions are being intensively studied and there seems every reason to hope that diagnostic curves eventually may be formulated for cerebral disease just as they have been for myocardial disease. Elsenberg and his associates in the Neurological Institute in New York are using olfactory tests in the localization of brain tumors and have already obtained very encouraging results.

TREATMENT

The treatment of brain tumors is surgical. That statement is made as a general principle, with the full realization that in certain exceptional cases roentgen ray or radium is the method of choice. Recent advances in surgical technic have made possible the exposure and removal of many tumors which formerly were

not amenable to surgical attack. These advances include the introduction of new types of anesthesia and new technics for their administration; the use of the electrosurgical unit for the control of hemorrhage and the excision of tissue; the use of suction for the removal of soft tumor tissue and devitalized brain tissue.

TUMORS OF THE SPINAL CORD

Tumors of the spinal cord are classified as are brain tumors, although malignant tumors are not nearly so common in the cord as in the brain. Their diagnosis, localization and treatment are less involved and less intricate than are corresponding procedures affecting tumors of the brain. Surgery is simpler and safer; the prognosis, generally speaking, is much better. The use of roentgen ray or radium should be routine after operation for all malignant gliomas.

CONCLUSIONS

To summarize, certain conclusions concerning brain tumors should be emphasized:

1. Such neoplasms are commoner than is generally realized.
2. Brain tumor should be suspected as the cause of any progressive neurologic derangement which cannot be explained otherwise.
3. Brain tumor should be suspected as the cause of convulsions which have their onset in adult life and which cannot be explained otherwise.
4. The classical triad of headache, vomiting and choked discs is a late syndrome and the diagnosis should be made before it occurs.
5. Spinal puncture is a diagnostic method which is sometimes necessary but which should be used cautiously and only upon definite indications.
6. The treatment of brain tumors is essentially surgical.
7. Because of recent advances in both diagnosis and therapy, the prognosis of brain tumors is generally far better than it was ten years ago.

MALIGNANCIES OF BONES

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When considering malignancies of the skeleton it is essential to remember that they are either primary or metastatic. Metastatic malignancies are secondary to lesions in the breast, prostate, uterus, thyroid, adrenals and other organs. Treatment in these cases can be only palliative.

As a corollary to this I might remind you that many so-called radical operations on the original lesion should not have been performed. Metastatic lesions present at the time of operation would have been found if proper roentgen ray study had been made prior to operation. It is incumbent upon us not to operate upon breast tumors or prostatic malignancies unless one is satisfied that skeletal metastases are not present.

Primary malignancies of the skeleton are comparatively rare. Frederick Hoffman, in the Cancer Survey of San Francisco, 1924 to 1927, gives the following statistics of mortality per 100,000 population: All forms of cancer, 148.7; stomach cancer, 51.5; breast cancer, 12.5; malignancy of bone, 2.7.

Langenskiöld (Sweden) found 78 bone sarcomas out of 88,000 surgical admissions.

In Touro Infirmary from 1932 to 1936 a total of 25,302 operations were performed. There were 1,660 recorded malignancies of all types, and two proved cases of osteogenic sarcoma.

Primary malignancies of bone for this short survey may be considered under two heads: (1) Osteogenic sarcoma; (2) Ewing's tumor (endothelial myeloma).

RESULTS

In either of these or both the end results are dependent upon early recognition and early appropriate treatment.

What are the end results? Bloodgood stated that in 1920 the five-year cures of sarcoma of bone recorded in his laboratory were less than 4 per cent. In 1931 the five-year cures had reached 30 per cent. Behring (Sweden), 1935, stated that end results in cases of osteogenic sarcoma, localized in the lower end of the femur or tibia, treated by amputation of the

femur with freedom from recurrence are 25 per cent and 27 per cent respectively after four years. Meyerding, 1935, gave 16 per cent as a record of cures at the Mayo Clinic. These figures indicate that some progress has been made, but very little.

Since the end results and appropriate treatment are dependent upon early diagnosis we must turn immediately to the thought of how an early diagnosis can be made.

DIAGNOSTIC FACTORS

The early diagnosis is dependent upon our being malignancy conscious. The factors of importance in diagnosis are: (1) History; (2) physical examination; (3) roentgen ray examination; (4) biopsy.

Sarcoma of bone is essentially a disease of early life. Pain precedes other symptoms. In about 50 per cent of the cases there is a history of trauma. Persistent pain after trauma, in which no fractures are demonstrated at the time of the original roentgen ray, calls for a painstaking study of subsequent roentgenograms. Pain precedes tumor formation by a few weeks.

Tumor formation is rapid and progressive. There are often markedly dilated superficial veins over the tumor. The skin is usually not very mobile over the tumor. Approximately 50 per cent of all osteogenic sarcomas occur in the femur, about 25 per cent in the tibia and the remainder in the other long bones.

Fever, leukocytosis, tenderness are not common in osteogenic sarcoma, but are commonly found in Ewing's type of tumor, thus causing confusion between the Ewing tumor and osteomyelitis.

The roentgen ray is the most valuable of all methods of diagnosis. As a rule, osteogenic sarcomas are both proliferative and destructive, osteoplastic and osteolytic. As a rule, the proliferated bone is laid down in radial fashion. In the Ewing's type of tumor it is laid down in an onion peel-like appearance and at times produces central destructive lesions simulating osteomyelitis.

Regional lymph nodes rarely, if ever, are involved. Osteogenic sarcoma rarely invades the neighboring joint. The joint cartilage seems to act as a barrier to the progress of the

disease. In osteogenic sarcoma, the old shaft can as a rule be seen passing through or surrounded by the new bone tumor formation.

The roentgen ray plus the history and the physical examination form the safest triad for diagnosis. This statement may be immediately challenged by those who would consider biopsy as the all important diagnostic procedure. Biopsies in osteogenic sarcoma are both inadequate for diagnosis and dangerous to the patient if immediate operation is not performed.

These statements are based on personal experience and on the word of such men as Ewing and the experimental proof submitted by Saphir from the Michael Reese Hospital.

The following is quoted from Ewing's article, *The Place of the Biopsy in Bone Sarcoma*:

"1. The biopsy should be the last step in the diagnosis of bone sarcoma.

"2. The clinical and radiological picture of the case of bone sarcoma usually furnishes a better conception of the diagnostic and therapeutic problem than can be obtained from a biopsy.

"3. No experienced pathologist wishes to make critical diagnosis without such data.

"4. The general data furnish the diagnosis and strongly influence, or even decide the histologic report, and he, the pathologist, wonders why the biopsy was made.

"5. No tumor responds to surgical treatment with such markedly increased malignancy as does bone sarcoma.

"6. In no malignant tumor do tumor cell emboli break into the blood vessels more readily.

"The limitation in the histologic diagnosis of bone tumors and the conditions which simulate or accompany them are realized by few surgeons. The sources of error are numerous.

"In the walls of many benign cystic giant cell tumors there is a zone of reactive tissue which closely resembles osteogenic sarcoma.

"In the central portion of many giant cell tumors, the tissue resembles medullary spindle myxosarcoma.

"On the outer portion of some slowly growing ossifying sarcomas, the tissue resembles the normal bone of myositis ossificans.

"In the central portions of some periosteal fibrosarcomas the cells may be atrophic and the tissue suggest a benign fibroma, whereas the outer portions are active and malignant.

"Many bone sarcomas are associated with chronic suppurative and non-suppurative osteomyelitis.

"The pathologist is often puzzled to decide whether the surrounding cellular tissue is degenerating tumor or regenerating inflammatory tissue.

"Many cases of active myositis ossificans present a structure which is difficult to distinguish from sarcoma."

Codman, commenting on Ewing's paper, stated: "It is largely a confession of the weakness of pathologic opinion based on microscopic evidence alone. Only a great pathologist can afford to be so frank, for he is at the same time condemning the popular operator who relies on a hasty biopsy."

The danger of biopsies when done by a surgical knife has been studied experimentally by Saphir from whose work I quote: "Examination of the blades of knives used for removal of biopsies from malignant tumors revealed a varying number of apparently viable tumor cells. These tumor cells represent a potential danger, as they may be a source of local recurrence and also of metastasis."

Summarizing with reference to biopsies it would seem safe to state that no time must intervene between the biopsy and the operation if one would avoid the danger of transplanting malignant cells. Too much dependence cannot be placed on biopsy as pointed out by Ewing. Sections from various portions of the same tumor may show different characteristics.

Study of the Sarcoma Registry will convince anyone that the same specimen, submitted to different pathologists, is differently interpreted, making an accurate and absolutely dependable diagnosis from a histologic standpoint seem not to be possible in all cases.

TREATMENT

The next question—what is the appropriate treatment? I believe that this may be summed up in the following statement: An operation, to be effective, must be early and radical. If a

diagnosis can be made before metastasis has occurred, amputation offers the most hopeful method for cure. Before any form of treatment is instituted it is important to determine the presence or absence of metastases. A roentgen ray picture of the chest is of value.

According to Ewing "amputation alone cured some advanced cases, as well as some early cases. Neither toxins alone nor radium alone cured any."

Whether preoperative radiation should be instituted is still debated by some. Forssell, one of the greatest radiologists, adhered to the principle of not treating operable stages of any form of cancer until, through experience on inoperable and borderline cases, he has been convinced that results can be obtained fully comparable to those obtained by surgical procedures. In 1930 he stated: "It is very doubtful whether radiation prior to or after amputation is of any use. Radiologic treatment alone should as yet not be advised in operable cases of osteogenic sarcoma of the long bones."

Channing Simmons believes that "time lost by subjecting a patient to adequate radiation before operation more than offsets the possible danger of disseminating the disease by biopsy with the tourniquet in place and immediate amputation." He further states that "all proved cured cases of Ewing's tumor have had an amputation performed."

Geschickter and Copeland state "chances of cure are more than 25 per cent when primary radical operation is performed. This probability of a cure becomes less the longer the duration of symptoms prior to operation and the greater the interval of time elapsing between an incomplete primary operation and radical treatment."

Phemister stated "malignant bone tumors in the extremities, regardless of variety, should be treated by amputation when there is no evidence of metastasis."

Ewing, Codman, Coley, Saphir, Geschickter and Copeland, and others advise operation in preference to radiation of any type as a curative procedure in osteogenic sarcoma.

SUMMARY

1. Sarcoma of bone is comparatively rare.
2. For early diagnosis one must be malignancy conscious.

3. Pain in the long bones in an otherwise healthy young adult persistent over a long period of time, if not associated with evidence of acute inflammatory manifestations, should at least arouse suspicion if, added to the pain, swelling occurs near the end of one of the long bones. The part should be subjected to careful roentgen ray study.

4. Delay of a few weeks, until something turns up on the Micawber plan, may be fatal to the patient.

5. While the roentgen ray manifestations are the most reliable, they are at times confusing and misleading.

6. Biopsy, if not followed by an immediate operation, is both inefficient and dangerous.

7. The biopsy, according to Ewing, is not always diagnostic.

8. Irradiation, whether with radium or roentgen ray, has not proved, up to the present time, an adequate substitute for early surgery.

9. Surgical procedures to be useful must be radical.

CANCER OF THE SKIN

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NEW ORLEANS

No one should die of, or because of, skin cancer. This is a broad assertion but when one considers the easy accessibility for both morphologic and histologic study, as well as the ease with which they can be destroyed when detected early, this statement no longer seems due to a flight of my imagination.

The cure of skin cancer is certainly possible but the responsibility for this result in dealing with such a terrible scourge depends upon co-operation of the physician and the patient. The doctor must acquaint the laity with the known facts concerning possibility of cure and the patient must cooperate by submitting to complete periodic physical examinations, and by following the recommendations made by the examiner. It is by the presentation of such sym-

posia as this, that most knowledge can be disseminated to the parties concerned. Teach and preach that cancer can be cured if detected early enough and properly treated.

The crux of the whole skin cancer problem lies in early recognition and prompt, thorough treatment of the new growths. Cancer has been a scourge since civilized man first recorded his deeds and thoughts. In fact, cancer has been known and studied since the very dawn of civilization. Medical archives from the time of the Hippocratican writers until our present day are replete with contributions in this subject.

The riddle of the problem of cancer has been rendered almost unsolvable by its very nature which is closely akin to that of growth itself, about which human knowledge so far is relatively negligible. The living cell is the most complex organization of matter known, while literature of cancer research is so enormous that periodical publications of abstracts are devoted solely to the consideration of this research. The last half century, however, has seen great progress in this perplexing problem of medicine. The time allotted to this brief paper will not permit a discussion or even a mention of these cardinal discoveries of cancer study.

In 1934 I completed a survey of 2,200 cases of cutaneous cancer and reported on same. There have been many additional cases added to this group but for the most part the comments in this paper are gleaned from the data obtained in the original survey.

Cancer has been estimated to cause the death of half a million of persons yearly among the civilized nations of the earth and untold misery and suffering to many times that number. In the United States there were approximately 100,000 deaths in 1933 from cancer.

The history of medicine clearly shows that it is sometimes unnecessary to know the cause of a disease in order to discover an effective treatment. A knowledge of the disease process is at times sufficient to permit judicious and rational therapy.

Without meaning to discount the value and necessity of scientific laboratory investigation of the cancer problem with its numerous phases, I believe the only true basis upon

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which all real advance as to the nature, treatment and prevention of cancer can be established, must be founded upon clinical observations with properly controlled laboratory research. To effect this the patient must be studied in all relations of life, both before and during the existence of cancer; what is wrong must be determined by synthesis and deduction, and all possible endeavors made to correct it.

Epithelial tumors of the skin, both benign and malignant are so common and are so easily accessible for study morphologically and histologically that it is surprising how much ignorance prevails concerning them. Cancers of the skin are important and interesting from a number of points of view. The variety of clinical and morphologic forms by which these cutaneous neoplasms are made manifest is surprising.

PRECANCEROUS DERMATOSES

The study of skin cancers has been simplified by frequency and easy accessibility. In many of these epitheliomas a definite predisposing etiologic factor associated with cellular hyperplasia has been shown. It is generally conceded that cancer of the skin originates from some abnormality of the integument and not from normal epidermis. Of course, some may argue that any lesion of the skin is a potential cancer. It is sufficient to say that the line separating malignant from benign epithelial growths of the skin is often a very obscure one, and the burden of proof rests on those who are prone to discount the importance of these inoffensive lesions of the skin which are recalcitrant to treatment.

Some of the more common conditions which show a special disposition to develop into epithelioma are: Burns, chronic actinic dermatitis, radium dermatitis, roentgen dermatitis, keratoses (senile, seborrheic, Darier's disease), verrucae, leukoplakia, sinus and fistulas, chronic ulcers (crural, decubitus), chronic fissures, cornu cutaneum, Paget's disease, nevi (pigmented moles), xeroderma pigmentosum, cutaneous tuberculosis (lupus vulgaris and lupus erythematosus), syphilis, deep mycotic infection (blastomycosis), cysts, papillomata, occupational dermatoses (embedded metal, scars, heat, light, soot, paraffin, coal tar, arsenic, aniline).

BIOPSY

Helwig² has stated that if every cancer could have the advantage of a biopsy the mortality of cancer would be greatly reduced. Biopsy should be used when diagnosis cannot be made by any other means. It should be done as an accurate means of classification with the purpose of determining the mode of treatment.

While the fear of biopsy is becoming less, however, when it is necessary, a histologic study should be made, since the more recent work on the therapy of cancer is concerned principally with radiosensitivity, and this can be judged only by the classification of neoplasms formulated by histologic study with subsequent therapeutic study and follow-up. For such enlightenment we are indebted to Broders, Cutler, and others.

A microscopic classification of tumors is too highly specialized a field to be included here, but the histologic varieties of epitheliomata of the skin warrant consideration.

The great majority of cancers of the skin are of the basal-celled type. The squamous-celled epithelioma, while much less common, transcends the former in importance, because of the higher mortality associated with it. The squamous-celled cancer grows more rapidly and metastasizes frequently. This is especially true in lesions of the oral mucous membrane or of the mucocutaneous junctions. The mixed or transitional types are still less common than the squamous-celled variety, and fortunately the melanocarcinomas are comparatively rare.

The crux of the whole cancer problem is early diagnosis, for while the precancerous lesions of the skin are relatively benign in their early stages, recognition would greatly facilitate the treatment of epithelioma.

INCIDENCE

About 100,000 patients die of cancer in this country each year. Statistics show a slight increase yearly. At the present time there is great discrepancy between mortality and incidence of skin cancer. It is extremely difficult to determine just what proportion of mankind skin cancer affects. Wells³ quotes statistics from the Huntington Hospital in Boston showing that it is the most common form of cancer treated there. Pearl and Bacon⁴ point out that it is a more frequent cause of death than is

the case with any other form of cancer, as indicated by autopsy statistics, because a greater proportion of victims of skin cancer die at home instead of in a hospital.

There are several incidental factors which must be considered in studying epithelioma of the skin from a clinical aspect. It is generally conceded that cancer of the skin most frequently occurs in those past middle life. The two sexes are almost equally affected, except in the case of cancer of the mouth, which is considered very rare in women. Epithelioma of the skin, especially the squamous-celled type, is considered by many as an uncommon occurrence in the negro race, and the basal-celled type is unknown to many. Location has been one of the major diagnostic points of differentiation and under circumstances where a biopsy is not practical, it has formed a criterion upon which to prognosticate. Some of the incidental factors, now always specifically proved, follow here.

Age: Most of the epitheliomas of the skin occur in the relatively old, but many have been observed in childhood. Selberg⁵ has reported a series of cases occurring in infants and children. Pantrier described a squamous-celled epithelioma occurring on the face of a child nine years of age. In this group just studied the ages ranged from 11 years to 94 years. Wassink and Wassink⁶ have reported 9 per cent under 50 years and 43 per cent over 70 years of age.

Sex: Both squamous and basal-celled epitheliomas are more common on the skin of men than of women. Daland⁷ reported a series of cases in 1926 and found a ratio of six to four.

Race: There is an abundance of evidence that cancer is not only common among the negro population of the United States at the present time, but that certain types of cancer are more common among the negroes than among the whites. A report by Dr. Louis I. Dublin in 1925, for the Metropolitan Life Insurance Company, showed that cancer of the buccal cavity was less frequent in the negro male than in the white male at ages above 25, while in negro females between ages 25 and 74 buccal cancer was more common than in white females.

Cancer of the skin prevailed at the rate of

2.1 among the white males and 0.7 among colored males. Among white females the rate was 1.6, against 0.8 for colored females. The cancer death rate of the City of New Orleans for the years 1919 to 1922 was 125.3 per 100,000 for the white, against 121.8 for the colored. These figures represent deaths from all types of cancer. In this same period the death rate for cancer of the buccal cavity among the whites was 16.8 against 6.9 per cent for the negroes. The skin cancer deaths were: whites 0.6 per cent, as against negroes 0.5 per cent.

Hoffman,⁸ in reporting the San Francisco cancer survey published in 1927, listed the death rates from cancer of the various parts for the two races in New Orleans for the period 1919-1923 as follows:

Cancer of the lip among the whites prevailed at the rate of 0.3 against a rate of 0.4 for negroes, and cancer of the tongue 3.5 for the whites and 1.0 for the negroes. He commented on the correlation of syphilis and cancer of the tongue and the fact that syphilis was more common in the negro race than in the white. Cancer of the mouth was the cause of death of 0.6 per cent of the white mortalities and 0.4 per cent of the colored ones.

The purpose in emphasizing the incidence among the colored race is to impress upon the minds of the profession the fact that epithelioma of the skin is not uncommon in negroes.

Dr. Rudolph Matas,⁹ in 1896, in analyzing the cancer problem at Charity Hospital from 1884 to 1893, said: "It would appear from all this and other evidence that the opinion which has long existed that the negro was formerly less liable to malignant disease, and especially as to true cancer, is founded on some ground, though it is equally certain that at present cancer affects the races in the same proportion."

The statistics of the hospital go even further than this, indicating a greater prevalence of cancer among the colored patients, and, as they faithfully represent the experience furnished by the institution, they are worthy of serious consideration.

CARCINOMA OF THE SKIN IN THE UNITED STATES	
1923-1927	Percentage of deaths among negroes from carcinoma of the skin.....1.4
1927-	Percentage of deaths among the whole population from carcinoma of the skin2.8

MORPHOLOGIC VARIATIONS

Hertzler,¹⁰ in a treatise on tumors, stresses the importance of location in neoplasms of the skin. Not only are the morphologic and distributional factors of importance from a diagnostic standpoint, but the location determines the mode of therapy, as well. One must always consider the adjacent structures as well as the depth and consistency of the involved areas. Since skin cancer has too many phases to consider in a short survey, only a few high lights of diagnosis and therapy can be stressed here.

RATIONAL THERAPY

Time will not permit a discussion of the therapy employed in this series, but a partial analysis of the comparative value of general therapeutic measures cannot be omitted.

The most desirable method of control of skin cancer is prevention, and this can be attained only through early recognition. Every patient is a law unto himself. The percentage of failures in cancer treatment can be cut down considerably by the correct selection of the therapeutic measures to be followed. Topographical distribution, type of cancer, color of the patient's skin, age and general condition all are factors to be taken into consideration.

The grading of cancer to determine the degree of radiosensitivity must be carried out in required cases. Metaplasia results from bad treatment.

The methods of cancer therapy are so specifically various and so increasingly numerous that it is absolutely essential for the conscientious physician to acquaint himself with each new discovery and compare its special indication and excellence with previous or parallel measures.

Surgery: Many believe the use of surgery alone is gradually dwindling as a choice of treatment, but with all the brilliant therapeutic results of roentgen ray and radium the secondary lymphatic involvement still remains a problem. Only freely movable glands should be dissected. The diathermy knife is still proving a most valuable early therapeutic agent. In severe carcinoma of the ear surgery is often necessary. Around the ear caution is required in the use of irradiation.

Roentgen Ray: As far back as 1900 it was known that certain superficial epitheliomas

could be cured by the roentgen ray, but the introduction of the Coolidge tube in 1913 increased the usefulness of this form of therapy. Now roentgen ray therapy is used alone and in connection with surgery, radium and endothermy. Both long and short roentgen rays are used. The skin tolerance for short waves is greater, the time advocated for long wave lengths being 6-12 minimum erythema doses. An attempt to produce a cure in the first attack should be made as radioresistance often occurs when roentgen ray therapy is given too slowly.

Radium: Radiotherapy is gaining followers steadily as the excellent results obtained in various tumor clinics are published. Perhaps one of the most encouraging reports for this mode of therapy has come from the Radium Hemmet in Stockholm, which reports 78 per cent cures by radiotherapy, as compared to 65 per cent by surgery. Eighty-six per cent of lip cancer cures were obtained with radium alone, 73 per cent of similar cures were effected by surgery alone. These figures are significant because this particular carcinoma site responds especially well to early surgical intervention. In the cases of buccal cancer treated at Radium Hemmet, 55 per cent were cured with radium, as against 41 per cent with surgery. In cutaneous cancer 92 per cent were rendered free from symptoms. The Hemmet advises irradiation only of fixed lymph nodes with metastasis.

The Gynecologist¹¹ of Sweden reports 2.6 per cent better results with radium. Certainly in cutaneous and labial cancer radium seems to have a great field. Radium is now used to treat almost every accessible cancerous area. It is used at any stage of cancer. Generally speaking, interstitial radiation does not do so well as surface applications. With all the encouraging reports of radium therapy, it must be remembered that it has its objectionable features. Even though radon is becoming more easily accessible, the cost of radium therapy is prohibitive to many and radium is still inaccessible to some. In inexperienced hands radium is far more dangerous than surgery.

Cancer as a disease is doubly complicated by the fact that the methods of therapy, as well as the disease itself, must be carefully controlled. If surgery is to be used the object is to

destroy all suspicious tissue, while at the same time taking every precaution to avoid unnecessary trauma. Preoperative and postoperative care are indispensable. Half-way measures are not only useless, but dangerous. Cosmetic results should be only a secondary consideration. Oral hygiene, especially in buccal cases, is most important. Close follow-up of treated patients is as much a factor as any other adjunct to therapy. While his dependents must be kept informed of the true course of the disease, the doomed case must be encouraged in every hope.

A thorough investigation of the literature of skin cancer in all its cumulative aspects and extensive records, and a fair experience in treating a large group of cutaneous cancer in a well organized clinic on a complete skin service results in the inevitable conviction that there is no one method for treating skin cancer. No one therapeutic method can be used to the exclusion of all others. Even combinations have their limitations. While deep roentgen ray therapy in conjunction with local irradiation shows especially successful results, each patient must be considered individually. The best procedure seems to be a combination of several of the best methods selected to affect the particular symptoms of the special case.

CONCLUSIONS

1. The crux of the whole cancer problem is early diagnosis, for while the precancerous lesions of the skin are relatively benign in their early stages, recognition would greatly facilitate the treatment of epitheliomata.

2. Epithelioma of the skin is not uncommon in negroes. The percentage of deaths in the United States among negroes from carcinoma of the skin was 1.4 during the years 1923-1927. There is an abundance of evidence that cancer of the skin is becoming more common among the negro population of the United States.

3. The importance of biopsy and classification of neoplastic skin diseases from a histologic standpoint is stressed.

4. Aside from the incidental factors of age, sex and race, location is one of the major diagnostic points of differentiation under circumstances where biopsy is not practical.

5. Rational therapeutic measures are briefly touched upon. The inevitable conviction that

there is no one method of treating skin cancer is reached. No one therapeutic method can be used to the exclusion of all others. The best procedure seems to be a combination of therapeutic measures. The importance of close follow-up is paramount.

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CARCINOMA OF THE STOMACH†

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In carcinoma of the stomach cure is possible by only one method, gastrectomy. Gastrectomy is possible only while the disease is still intrinsic. The disease is intrinsic only in its early stages. Those are the salient considerations in carcinoma of the stomach, and the conclusion of the whole matter lies in the statement that the curability of the disease depends upon promptness of diagnosis.

Whose fault is it that diagnosis is usually so long deferred? Whose fault is it that at most not more than 10 of every 100 patients, indeed not more than 2 or 3 of every 100 patients, are saved from death? Partly the patient's fault, of course. He overlooks his mild initial symptoms, he fails to recognize any change in the character of long-standing symptoms, he may be honestly unaware of his symptoms until the disease is far advanced. He doses himself with radio-advertised remedies for indigestion.

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He puts off medical consultation for reasons of fear or finance, and he declines the advice offered him for the same reasons. He selects his surgeon on any basis but that of established competence. By these and a dozen other methods he signs his own death warrant.

And what does the physician do? His errors are three-fold. He tries to diagnose carcinoma of the stomach by rule of thumb, and, failing, eliminates it entirely from his consideration. He tries to diagnose it by the trial and error method, the wait and see method, and the patient pays the piper. Most usually he overlooks it entirely because the disease in its early, curable stage is entirely unlike the so-called typical picture which most of us were taught and which many of us, regrettably, still teach.

EARLY CLINICAL SYNDROMES

The patient on the autopsy table, emaciated, dehydrated, with a fixed mass in his epigastrium, with a story of increasing pain and weakness and disability and slow starvation, must be dismissed from our memories. We must picture the patient with carcinoma of the stomach as a healthy, well nourished individual who, if he is in the doctor's office at all, is not quite clear why he is there. He may be a middle-aged or an old man, but there is at least one chance in ten, or even in nine, that he is less than forty years of age. His story may be indefinite, and he may present any one of several clinical syndromes. He may, for instance, be more likely to realize that he is not perfectly well than to think that he is sick. He is less energetic than he was, his sleep is disturbed, he tires quickly, he is aware of malaise, he has lost his *joie de vivre*. Gastric disturbances he may deny entirely and emphatically. All the indications seem to point to his need for a tonic. Actually what he needs is a roentgen ray examination of his gastrointestinal tract. It may prove unnecessary and expensive and inconvenient, but it may also prove the means of saving his life.

In another group of patients the symptoms may be ushered in abruptly, perhaps by a dietary indiscretion from which there has never been full digestive recovery. There is a group of patients in whom the symptoms date from a previous, unrelated illness, recovery from which

is slow and the weakness and malaise of which tend to linger. I pass over with the scorn it deserves that condition mis-named intestinal influenza; I mention it merely to illustrate the type of illness under which I personally have seen carcinoma of the stomach masquerade. There is a group of patients whose first symptom is hematemesis. There is a group in whom, on the basis of previously sound and robust health, digestive symptoms are superimposed. At first there is epigastric discomfort unrelated to food. Later there is pain related to food. At first there is merely nausea, then the regurgitation of mucus, then vomiting; much later the vomiting of food ingested many hours or even many days before.

In short, as every physician knows, though as not all physicians remember, there are a dozen different clinical syndromes for carcinoma of the stomach in its early stages. The symptoms, considered individually, could mean anything or nothing, and they may not point to the stomach at all, let alone to serious disease of the stomach. Eternal vigilance is the price of safety. Nothing in diagnosis is comparable in importance to a careful, detailed, chronologic history, and it is well that it be taken independently, by several observers, in order that no point, however trivial, may be overlooked.

DIAGNOSTIC METHODS

With the suspicion of carcinoma of the stomach aroused, the next step is its confirmation or elimination. Physical examination in the early stages is practically never of value. Blood studies should be routine, but the anemia of gastric carcinoma, although later profound enough to suggest the diagnosis of pernicious anemia, is rarely distinctive in the early stages. Gastric analysis is of very doubtful value; even if achylia be present, it is by no means pathognomonic. Occult blood in the stools or gastric contents is evidence of ulceration, but tells nothing of its origin or location. In expert, though not in ordinary, hands the gastroscope has proved its possibilities. The roentgen ray, however, is the most certain of all diagnostic aids, and there is rarely a reason for failing to employ it. Positive diagnoses vary from 60 to 70 per cent in early cases, and in 20 or 25 per cent more the findings are so strongly sus-

picious as to be almost positive in conjunction with clinical observation. Furthermore, the conscientious radiologist is usually the first to request that his negative diagnosis be interpreted in the light of the clinical history.

He should not, however, be asked to do the impossible. If neither defect in contour nor abnormality in peristalsis be demonstrable, as may happen when the tumor is small and has not yet infiltrated the muscular coats of the stomach, obviously the radiologic findings will be negative. Then the clinician is driven back to his purely clinical findings, from which, for that matter, he ought never to depart very far.

One special type of patient with carcinoma of the stomach must be mentioned in some detail. He tells a long story of previous indigestion, which has suddenly become obdurate to previous methods of relief. Or he suddenly exhibits an exacerbation of digestive symptoms or a change in them. That sort of history immediately introduces the question of the possible transition of gastric ulcer into gastric cancer. I am aware that authorities of equal eminence hold diametrically opposite opinions upon this subject, and I am not concerned with the exact percentage of gastric ulcers which turn into cancer, or the number of cancers which are superimposed upon ulcers. The estimate varies from 1 to 70 per cent, but, so far as I am concerned, this is a purely academic consideration. The important consideration is that, whatever the percentage, some ulcers end as cancer and some supposed ulcers are cancer from their inception. These facts cannot be denied, and the corollary is that the prolonged treatment of supposed gastric ulcers, particularly in individuals in the so-called cancer period, is simply not safe. It is always based upon the fallacious assumption that the differentiation of gastric ulceration from gastric malignancy is possible by clinical and radiologic methods, whereas all the evidence points to the conclusion that this is not only not possible, but is not even approximately accurate. A guess is the best that the most experienced clinician or radiologist can offer in some 25 or 30 per cent of all cases, and a guess, as Lord

Moynihan well says, is a poor peg upon which to hang a man's life. And make no mistake, it is a life that is in the balance. Gastric ulcer and gastric malignancy must be distinguished positively, not probably, before the medical treatment of the supposed ulcer is undertaken. The physician must be fully cognizant of the responsibility he takes upon himself when he advises against surgery in such cases, regardless of how unlikely or uncommon he personally feels the transition from ulcer to malignancy to be.

The only safe rule is to regard as cancer any indigestion, with or without other symptoms, which appears after middle life in a previously well person; to regard as cancer any acute digestive disturbances in this period which are superimposed upon chronic digestive disturbances and which do not promptly respond to routine measures; to regard as highly suspicious of cancer any vague symptoms, even though associated gastric disturbances be lacking; to continue to regard as cancer any of these clinical syndromes until it is proved beyond shadow of doubt that it is not cancer; and to resort without delay to exploratory laparotomy if the diagnosis cannot be made otherwise.

SUMMARY

The suspicion that cancer exists is the one thing that really matters; certainty of diagnosis in malignant disease is frequently also the certainty of death. Operation on suspicion is always justifiable. Accurate diagnosis is a desideratum, but in the absence of incontrovertible negative findings, just as in the presence of doubtful positive findings, one is entirely justified in exploring without hesitation every person in middle life, or before middle life, who exhibits symptoms which rouse suspicion that cancer of the stomach may be responsible for them. Cancerous indigestion has no hallmarks, while it is still amenable to cure, to distinguish it from indigestion of other origins. A properly performed exploratory incision was never responsible for a fatality, and such an incision is the first step in the performance of gastrectomy, which is the only method by which carcinoma of the stomach can be cured.

CARCINOMA OF THE LARGE INTESTINE†

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The large intestine is one of the most frequent sites of malignant disease. Ten per cent of all cancers occur in it, this being approximately the same proportion found in the stomach. Half of these neoplasms involve the rectum only, two-thirds are located in the rectum and sigmoid combined, and five-sixths are located in the left half of the large bowel, including the rectum. The significance of these locations from the standpoint of diagnosis I shall discuss shortly.

Males are more frequently affected by malignancy of the large intestine than are females, the proportion being estimated as high as two to one by some authorities. Many cases have been reported in individuals less than thirty years of age, and one case is on record in a child of three years, but the majority of patients, as would be expected, are past middle life, and the greatest frequency is from forty to sixty years of age.

The cause of the disease is unknown except for one definitely established predisposing condition, polyposis. This must be accepted as a definitely precancerous disease and treated as such. It is rather generally believed that hemorrhoids and benign ulcers and fistulae of the rectum predispose to anal carcinoma, but most authorities do not accept the hypothesis. Against it, too, is the fact that anal carcinoma is relatively infrequent, whereas hemorrhoids are almost universal in their occurrence.

CLASSIFICATION

Three types of carcinoma are commonly encountered in the large intestine. Medullary adenocarcinoma, which is commonly found in the right half of the colon, produces large, bulky, ulcerating lesions, with little or no tendency to stricture formation. Scirrhus carcinoma, which is commonly found in the left half of the colon, produces small, hard, circumferential lesions, with a marked tendency to the

formation of so-called "napkin ring" strictures. Muroid or colloid carcinoma, which may be found in any location in the colon, accounts for only five per cent of all cases. It is characterized by its slow growth and by the formation of large, bulky, muroid tumors, with little tendency toward obstruction.

Carcinoma of the colon grows slowly and metastasizes late. Almost half of the cases coming to autopsy show entirely intrinsic lesions and more than half show no spread beyond the immediate neighborhood of the primary growth. Metastasis commonly occurs by way of the blood stream to the liver, or by way of the lymphatics to the regional lymph nodes. Enlargement of the regional nodes, however, cannot be accepted as evidence, per se, that metastasis has occurred; it is frequently the result of infection.

TREATMENT

The most successful treatment at this time is radical excision of the involved segment of intestine with its regional lymphatics. Radiation therapy and electro-coagulation are useful palliative measures but are not curative. On the other hand, while the results of surgical treatment leave much to be desired, the reasons for this state of affairs are readily apparent and can be remedied. The most important obstacle to cure is the fact that throughout the world these patients reach the surgeon on an average of twelve months after the onset of symptoms and some 50 per cent exhibit inoperable disease when they are first seen. The second obstacle is the surgeon's own deficiency: A large proportion of these patients are aged and debilitated, and extensive resection of the intestine, with its septic contents, from the vulnerable peritoneal cavity is a formidable procedure. In the best clinics a steadily increasing operability and a steadily decreasing operative mortality give evidence of improvement in diagnosis and in surgical methods, but there is still much to be accomplished. Some of the bolder surgeons have widened their indications of operability faster than diagnosis has improved, in the belief that more lives can be saved in the group of cases hitherto considered inoperable. Their attitude seems to me to be perfectly sound, since what remains of life for these unfortunate per-

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sons, without radical surgery, is certainly not worth preserving.

The results of operation at this time may be summarized in this fashion: Approximately half of all cases are operable when they first reach the surgeon. In the best hands the operative mortality for carcinoma of the right half of the colon is about 1 in 8 cases, with five-year cures resulting in about half of those who survive the operation. The operative mortality for carcinoma of the left half of the colon and the rectum is about 1 in 6, with five-year cures resulting in a third to a half of those who survive the operation. There is ample evidence that, as diagnosis improves and the disease is detected more promptly, the percentage of operability and the number of five-year cures increases in like proportion. It is obvious, too, that the operative mortality will decrease as the general condition of the patient improves, and Rankin's statement that in localized lesions of the right half of the colon it should be possible to reduce the operative mortality to five per cent and to increase the cures to 50 per cent does not seem over-optimistic. Lockhart-Mummery reports a five-year salvage of nearly three-quarters of his patients with small localized rectal lesions. Clearly the responsibility for improvement in results rests jointly upon the family physician and the surgeon, who must, between them, supply early diagnosis and high technical competence.

SYMPTOMS

The picture is made considerably brighter by the fact that early diagnosis of carcinoma of the large bowel is not only possible but is not even particularly difficult. Symptoms occur early, and even though they are not sufficiently clear-cut to establish the diagnosis in themselves, they are sufficiently suggestive to call for proper examination of the colon and rectum, which should lead to a correct diagnosis in nine out of every ten cases.

The characteristic picture of cancer of the right half of the colon is one of rapidly developing secondary anemia without assignable cause in a person of advanced age. If to it be added local pain and tenderness, usually of a mild degree, in the right side of the abdomen, a dyspepsia of the type usually associated with

chronic appendicitis, and an intermittent diarrhea, the suggestion of malignancy becomes very strong. The characteristic picture of carcinoma of the left half of the colon is one of slowly developing partial obstruction, frequently associated with melena. Cramps and tenesmus are common, and intermittent diarrhea is not unusual. In carcinoma of the rectum bleeding is practically a constant sign. Other symptoms include an irregularity of intestinal function, usually in the form of constipation, though diarrhea may be present, or there may be alternating diarrhea and constipation. Pain and tenesmus are also frequent.

If carcinoma of the large intestine is to be recognized early, the public must be educated to take intestinal disturbances to its physicians early, just as they have been educated to take lumps in the breast and sores on the lips or tongue to them. The public must be trained to cease its pernicious habit of self-medication for such disturbances. The family physician must be on the alert for malignant disease of the colon whenever a patient, and particularly whenever a patient past forty years of age, presents himself with unexplained anemia and weakness and whenever there are present also such symptoms and findings as a change in bowel habit; dyspepsia; local pain and tenderness in the abdomen, particularly over the cecum; melena; hemorrhoids; and constipation and diarrhea, alone or associated, with cramps and tenesmus.

DIAGNOSIS

When the disease is once suspected, the diagnosis is not difficult to establish. Carcinoma of all parts of the colon proximal to the rectosigmoid junction can be recognized in more than 90 per cent of all cases by a properly conducted radiographic examination. The barium meal by mouth is contraindicated; it is of little value and it may menace the patient's life by converting a partial into a complete obstruction. Examination after an opaque enema, on the other hand, in a properly prepared patient will almost invariably lead to a correct diagnosis in the hands of a competent radiologist. It should also be remembered that malignancy of the rectum or sigmoid, in which, as I have pointed out, two thirds of carcinoma of the colon is lo-

cated, usually can be seen by sigmoidoscopic examination. It should be remembered, furthermore, that half of all malignancy of the colon is located in the rectum, within reach of the examining finger. It is naturally not possible to make a positive diagnosis by digital examination in all cases, but it is quite possible to locate the lesion, and when this is done, the final diagnosis can readily be made by biopsy.

SUMMARY

The responsibility of the physician who first sees the patient is clear. It is evident that the means of making an early diagnosis are at hand; it remains only to make full use of them. If this be done, and if the patient be brought to the surgeon in good physical condition, and while his lesion is still localized, then the responsibility passes to the surgeon and is placed squarely upon his shoulders. It is my own belief that he will not be found wanting.

CARCINOMA OF THE CERVIX

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In the limited time allotted, I can only discuss in a casual manner some of the cardinal points of uterine malignancy, that is, the most important manifestations of early cancer of the cervix, the methods of determining the presence of early malignancy, and the treatment of cervical carcinoma.

Of all cancer deaths, 12.61 per cent are from cancer of the uterus. Four per cent of all gynecologic lesions in the patient passed the age of thirty-five are carcinoma of the uterus, and 35 per cent of all deaths from gynecologic disease in the same age group are from carcinoma.

SYMPTOMS

The cervix, unfortunately, sends out no danger signals of the beginning invasion by carcinoma. The patient herself receives no direct warning; there are no symptoms by which to read the presence of carcinoma in its initial stage. Only too seldom is the physician given the opportunity to make the diagnosis at this point. In spite of cancer educational campaigns, a large majority of women do not real-

ize the necessity of correction of lacerations and chronic diseases of the cervix or the gravity of abnormal bleeding, especially at or after the menopause, and wait until too late to seek the advice of their physician.

It is true of cancer, as it is true of many other bodily ills, that only the desire for the relief of pain will drive the sufferer into the doctor's office. But when pain is present in carcinoma of the cervix there can be no hope of ultimate cure. The medical profession is due some blame for many of the late cases. It happens too often that the patient seeks advice as to the cause of abnormal bleeding, merely to be given a prescription for ergot or some styptic, the outcome being that she returns later with pain and unmistakable evidence of an extensive carcinomatous involvement of the cervix.

Bleeding from carcinoma of the cervix is not of an intermittent or menorrhagic character; it is of a more or less constant nature and may ensue upon over-activity, trauma from intercourse, douching, or a vaginal examination. It is, as a rule, the first symptom of which the patient is conscious. Unfortunately, the amount of bleeding is no criterion of the extent of the lesion. Although the blood loss may be slight, the carcinomatous process may already have made serious inroads into the parametria, base of the bladder, rectovaginal septum, and iliac glands. Nor does it follow that because the bleeding has been of short duration, the lesion is, therefore, slight in extent. In 50 cases of Stage IV cancer in Lynch's series, there were 11 who had had a bloody discharge for only three months or less, and 10 others for between three and six months, yet all of these had very late inoperable cancers and lived, even after treatment, only an average of seven months.

EDUCATION OF THE WOMAN

Patients should be trained to submit to regular check-ups at one-year intervals after the age of thirty-five, for the skilled gynecologist, who makes a conscientious and thorough examination, can recognize potentially carcinomatous areas on the cervix long before the stage of ulceration and bleeding occurs. These small areas are palpable as slight nodular eleva-

tions on the vaginal surface of the cervix and have a glazed appearance. If the Schiller test is applied, they will stain only very slightly, if at all. This, however, does not indicate absolutely that the unstained areas are malignant, but does indicate where biopsy sections are to be taken.

The best answer to the cancer problem which we have today as specialists is to educate women to the necessity of regular gynecologic examinations, and to disabuse their minds of the false idea that discharge and bleeding are early symptoms of cancer. As my late brother, Dr. C. Jeff Miller, has stated: "Women must be taught that a vaginal discharge is never physiologic; that irregularities of menstruation are no more normal at the age of forty-five than at the age of twenty-five; that abnormal bleeding is not a natural accompaniment of the menopause; that neither discharge nor bleeding ever occurs from a healthy uterus when once menstruation has ceased; that pain is not an early symptom of cancer; and that the woman who deludes herself with the belief that because she has no pain she cannot have cancer is likely, at a later date, to pay a heavy price for her lack of wisdom."

If we are to campaign against cancer of the cervix, we must educate women that after the age of thirty-five all injuries sustained at childbirth, all eversion and erosions of the cervix, as well as any inflammatory disease must be cleared up by the operative procedure best suited to the particular case. Of women with cancer, 96 per cent have had babies, which puts the blame more or less directly upon injuries and inflammatory conditions resulting from trauma incident to childbirth. The figures of the late Dr. Graves, which were quoted several years ago, I think of extreme importance; they indicate that the predisposing causes of cancer of the cervix are largely injuries, ulcerations, erosions, eversion, and chronic infections of the cervix. Graves reported that only five cases of carcinoma occurred in 6000 women whose diseased cervixes had received proper treatment; while in 669 cases of cervical carcinoma, there were only twelve women who had had previous repair work. These figures imply that the risk of carcinoma is increased thirty-three times in

the patient whose inflammatory lesions and lacerations are not attended to.

LOCATION OF LESIONS

Originally, all carcinomatous lesions are entirely localized, and a simple excision of the involved area beyond the limits of the growth will effect cure. This is demonstrated by three patients I saw personally, in whom there was no reason to suspect carcinoma of the cervix at the time of operation. The cervix was amputated, and microscopic lesions, too minute to be visualized macroscopically, were found by the pathologist in the tissues removed. Because these microscopic areas of carcinoma were definitely localized and confined within the limits of normal membranes, no further treatment was thought necessary. All three of these patients have been free of any return of carcinoma for from one to three years.

There is apparently little tendency for carcinoma of the cervix to metastasize to distant parts of the body. Recurrences of carcinoma occur either locally on the cervix or spread to the parametria, rectovaginal septum, base of the bladder, and iliac glands, because of the generous vascularity and intricate network of lymphatics about the cervix. Excision of enlarged iliac glands reveals only 44 per cent of them involved with carcinoma. The other 56 per cent are enlarged because of the absorption of septic material about the sloughing carcinomatous lesion. Bonney states that "although in cases in which the regional glands are involved, the primary growth in the cervix is on the average of older standing and more extensive than in cases in which the regional glands are not involved, there is no hard and fast rule, and extensive glandular involvement may co-exist with a very small primary growth, whilst conversely, the cervical growth may be most extensive without any involvement of the regional glands."

Our cure rate in carcinoma of the cervix can only be based on a five year period during which the patient has had no recurrence of the lesion either locally or at some distant point. Many cases apparently remain clinically cured over a period of from sixteen months to three years, and then a complete slough in the vault of the vagina may result because of incarcerated

dormant cancer cells breaking through the confines which have held them in check up to that time.

TREATMENT

Different methods of treatment of carcinoma of the cervix are utilized in the various clinics throughout the world. These methods may be briefly enumerated as: pure surgery, irradiation with surgery, irradiation alone, or combined irradiation and deep roentgen ray therapy. Where several methods are used in the same clinic, surgery is, of course, applied only to the lesions which are limited entirely to the cervix and show no evidence of vaginal or parametrial involvement. Only a few men still utilize the extensive Wertheim procedure for carcinoma of the cervix. Mr. Victor Bonney, one of the most general users of this method, found in his series that 63 per cent of the total number of cases applying for treatment came within the limits considered amenable to operation. We have in our clinic applied surgery only to cases where all our methods of examination were negative for any cancerous lesion, but postoperative section revealed very early, well circumscribed areas of malignancy. Surgical procedures less extensive than the Wertheim operation give excellent results in such a group. The removal of both tubes and ovaries, a wide dissection of the broad ligaments, and a sacrifice of a generous margin of vaginal tissue, is sufficient in such instances. If the lesion is grossly evident, the case is regarded as beyond the realms of surgery and as one in which only radium and deep ray therapy are indicated. In applying radium to carcinomatous lesions of the cervix, one should have a clear understanding of the effects of radium and the amount of irradiation necessary. It is extremely important to apply the radium element so as to reach parametrial structures, rectovaginal septum, and the base of the bladder, as well as to crossfire the initial lesion of the cervix, to as great an extent as possible. Many cases of cancer are being cured locally but are dying of parametrial involvement which our present methods do not reach.

Some enthusiasm is being shown in several centers over irradiation followed a month or six weeks later by complete removal of the

pelvic structures. The reports from these clinics are not as yet sufficiently large, nor has enough time elapsed, to evaluate such an attack.

Suffice it to say, that all methods which are in use today have not in any way solved our problem of curing cancer of the cervix, and it would appear from all reports that, irrespective of the type of treatment inaugurated, we are all arriving at about the same miserable cure rate of from 20 to 25 per cent.

SUMMARY

Undoubtedly, this low rate of salvage in carcinoma of the cervix is due to the fact that, in most of the cases seen, the carcinoma has extended beyond local confines and out of reach of all the methods which we have for stopping the progress of the disease. In the final analysis, if we are to hope for better results, women must be educated not to wait for bleeding, foul discharge, and pain, to bring them for an examination, but that instead they should submit to an annual appraisal of cervical lacerations and chronic inflammatory diseases, and all irritations resulting from these lesions should be corrected by the proper surgical means.

MALIGNANCIES OF KIDNEYS, BLADDER AND PROSTATE

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KIDNEY

Nearly all tumors found in the kidney are malignant. They occur in the cortex in 90 per cent of the cases, are of uncertain classification and cannot be differentiated clinically. Tumors of the renal pelvis make up the remaining 10 per cent. These are similar pathologically to the tumors of the bladder, with the exception that in the kidney the squamous cell varieties are more often found.

The initial symptom in adults is hematuria in 40 per cent of the cases, pain in 30 per cent and tumor in 10 per cent. Occasionally all symptoms pointing to renal involvement may be absent. In 1000 collected cases one third had all symptoms present while only 10 per cent had bleeding, pain or tumor alone.

In children under six years of age a slightly

different problem is encountered. The tumors are almost entirely embryonic in type. They grow rapidly and encapsulate with little tendency to break through into the pelvis—thereby reversing the order of cardinal symptoms found in the adult. Tumor and pain predominate and hematuria is relatively rare. There is often an associated weakness, vomiting, fever and leukocytosis. Because of these latter symptoms and the presence of a mass, these cases are not infrequently explored with a needle for pus before an accurate diagnosis is made. Splenic enlargements are usually recognized by the blood picture and other tumors in the upper abdomen of children this age are so rare that any mass in this area can be called kidney tumor with little chance of error.

The diagnosis of renal tumor is based upon the clinical evidence correlated with urologic findings, which are: (1) A demonstration of the renal source of hematuria; (2) reproduction of pain; (3) associated disturbances in function; (4) an enlarged kidney shadow on plain roentgen ray, and (5) a characteristic pyelographic deformity. Roentgen rays of the chest and bones for metastases constitute a part of the routine study.

In so far as treatment is concerned nephrectomy before the metastases occur offers the only hope of cure. The immediate mortality varies from 11 per cent to 33 per cent with an ultimate mortality of almost 90 per cent. Kidney tumors cause about 2000 deaths in the United States each year.

BLADDER

Tumors of the bladder are of epithelial origin in 95 per cent of cases. They are all malignant. No sign or symptom is pathognomonic. Hematuria is the initial symptom in 77 per cent; it begins without warning, is usually painless, may be copious, is unaffected by rest, diet or drugs and stops as it begins—without rhyme or reason. This type of behavior may lull the patient and his doctor into a false sense of security by what they consider a happy escape from some serious disease. Hematuria in 95 per cent of cases is of serious omen and the time interval between first passage of blood and the institution of proper treatment should be as short as possible in an effort to reduce

the present mortality. Retention of urine may be produced by a growth in or around the neck of the bladder. Dribbling may occur if an infiltrating growth involves the vesical sphincter. Pain, frequency and burning signify infection, which always occurs at some time or other during the course of the disease.

The diagnosis of bladder tumor is based upon a cystoscopic study which determines the presence of growth, its size, location, whether or not more than one is present and the presence or absence of edema. A differential renal function is also a part of the cystoscopic examination. Specimens are removed for biopsy. It is our custom to use Broders' method of grading. He divides tumors into four groups according to the amount of cell differentiation. Grade one is least malignant and often referred to as benign papilloma. Grade four is highly malignant and very few recoveries from this type occur. Vaginal examination in the female and rectal examination in the male may reveal an infiltrating growth in the base of the bladder. Roentgen rays of the chest and bones determine the presence of metastases. Delay in diagnosis of bladder tumors is common. In collected series it has been shown that an average of two years elapsed between first passage of blood and the time an accurate diagnosis was made.

The treatment of bladder tumor is based upon its size, location and degree of malignancy. Grades one and two, if small, are often successfully handled by fulguration through the cystoscope. If large and multiple, fulguration through an open suprapubic wound is a better procedure. There is some doubt as to whether one is justified in fulgurating grades three and four. These should be treated by resection, if in a resectable position. Total cystectomy, before metastases occur, is a practical procedure and may be the only means of curing some of these highly malignant tumors. Roentgen ray therapy and radium are used in conjunction with the above methods. Bladder tumors cause about 4000 deaths in the United States each year.

PROSTATE

Carcinoma of the prostate is a frequent and deadly disease and comprises from 18 to 25 per cent of all prostatic obstructions. It is essenti-

ally silent until one of the following occur: (1) Obstruction to urination; (2) pain from pressure on pelvic nerves or (3) pain from metastases. There are no characteristic symptoms. The diagnosis is based upon stony hardness of the gland, irregularity in contour, fixation and lack of elasticity of the prostate. The diagnosis is often made by discovery of bony metastases by roentgen ray. It is differentiated from stone in the prostate by roentgen ray and from chronic inflammation by massage. Inflammation improves on massage and carcinoma becomes rapidly worse.

Treatment of carcinoma of the prostate is more or less unsatisfactory, and cure by any method is doubtful. All efforts are directed toward postponement of death. The methods at our disposal are radical removal, as practiced by Young, Gilbert Smith, and others; resection for relief of obstruction, as practiced by the majority of urologists throughout the world today; roentgen ray and radium. According to Barringer 20 per cent are radiosensitive. The average life expectancy, after a diagnosis is made, is two and a half years. Carcinoma of the prostate causes about 5000 deaths in the United States each year.

THE PRESENT STATUS OF RADIATION THERAPY IN CANCER

M. D. TEITELBAUM, M. D.

NEW ORLEANS

The growth of radiation therapy has been so mushroom in rate, that some brief review of its history is essential to explain certain viewpoints and to indicate certain trends. Within a year of Roentgen's discovery of the x-rays, their biologic action was noted, and, as early as 1896, carcinomas of the breast and stomach were treated by radiation. These first attempts were inspired, of course, by the curiosity of despair and limited by the crudity of the apparatus and the courage of the experimenter. Further progress depended upon technical advances in the capacity of the machine and stability of the tube. The reduplication of results in the individual laboratory and the transferring of data from one clinic to another only became possible with the development of internationally

standardized measuring devices. Deep therapy of the present day implies a 200 kilovolt transformer, but this concept is by no means static and heated arguments obtain between the advocates of this conventional deep therapy and the proponents of millionvolt and telerradium equipment.

With the development of powerful equipment and of increased depth doses obtained by filtration and cross firing, different philosophies of treatment arose. In Germany, Seitz and Wintz developed the concept of one massive dose which would completely eradicate the tumor. This approach unfortunately also reduced the patient to that critical point where only prolonged hospitalization with multiple transfusions brought him back to even moderate usefulness. For this reason and its medico-legal connotations, the method never became popular in this country and we practiced what might be known as the sporadic technic—a dose now and then, both amount and interval being entirely capricious. The results except in very occasional cases were nil. From Regaud's idea of the prolongation of treatment time so that more of the neoplastic cells might be exposed during their sensitive phases arose what might be termed the modern rationale of therapy. Its practical application is seen in the use of highly filtered radium, the Kingery-Pfahler saturation method of roentgen-radiation and the Coutard doctrine of protracted fractionated irradiation. Certain principles are now believed to be essential to a correctly planned course of treatment:

1. The entire cycle of radiation must be delivered during an optimum time interval. This interval varies somewhat with different lesions, but in general, unless the therapy is so executed, the tumor and its bed develop an immunity or resistance to further radiation which renders supplementary or renewed treatment of no avail. Cancers which might well be cured by a first adequate series will become hopelessly incurable if subjected to small, repeated, inadequate exposures to roentgen ray or radium. If, on the other hand, the cycle is concentrated over too short a period many of the tumor cells will remain in the resting phase throughout its entire duration and consequently be relatively less affected. The opportunity for cure by radiation truly knocks but once.

2. The dose delivered to the tumor must be adequate. Irrespective of the histologic type of tumor (i. e., its classification on the Broders' scale), the amount of radiant energy applied must approach, but not quite equal the lethal dose of the surrounding normal tissue.

3. Each component part of the tumor must receive adequate treatment. Failure here is bound to result in local recurrence.

4. The filtration must be sufficient to take advantage of the selective effect of irradiation on the tumor cell rather than to depend upon its caustic action. In brief, what is required is the exposure of all parts of the tumor to a sufficient quantity of highly filtered radiation in divided doses over an optimum time.

The method, if followed to completion, is not a procedure to be lightly regarded. It takes a considerable toll from the patient not only with respect to the second or third degree dermatitis over the local area, but also because of the pronounced systemic effects. The procedure is a radical one and has two absolute prerequisites. First, a patient in fair physical condition and second, a tumor which can be cured. If either of these is wanting one must relinquish the thought of cure in favor of that of palliation.

CURABILITY

Considering these two criteria of curability more closely, little more need be said concerning the general condition of the patient. It is useless to plan a prolonged regime of therapy for a cachectic debilitated patient.

One other incalculable factor which must be mentioned at this time is the individual patient's reaction to the ray. Some apparently robust persons tolerate radiation so poorly that no proper course of therapy can be carried through.

With regard to the curability of the tumor itself several factors must be considered. Probably the most important of these is the radiosensitivity. Those tumors may be classed as sensitive which are sufficiently more susceptible to radiant energy than the surrounding normal cells, that they may be completely destroyed, while the latter are preserved. The sensitivity of the tumor depends on: (1) The site: some organs being more frequently the seat of sensitive tumors; (2) the histology: in a broad sense

epidermoid carcinomas of the skin and mucous membrane are sensitive, while adenocarcinoma, melanosarcoma, fibrosarcoma and osteogenic sarcoma are resistant; (3) the therapeutic test: this is the only certain test in many cases.

The properties of a tumor other than its sensitivity which influence its curability are: (1) The extent of the disease. Metastases are frequently more resistant than the primary lesion and may indicate a generalization beyond the limits of any possible adequate radiation; (2) the anatomic structure and accessibility to radiation. Differences in this respect make, for example, carcinoma of the cervix so much more favorable than carcinoma of the esophagus.

When for one reason or another no cure is to be attempted and only palliation is desired, the plan of attack is entirely different. Instead of a maximum rigorous course, just so much treatment is given at any one time as to relieve the symptoms without harming the patient more than is consistent with this result. Carcinoma with metastasis, leukemia and the lymphomas are so handled.

INCURABLE BY RADIATION

In an intermediate position are those tumors which cannot be cured by radiation, but which may be rendered more easily operable. Preoperative radiation favorably influences Wilm's tumor, and Ewing's tumor, as well as to lesser degree, other tumors of the kidney, carcinoma of the bladder and carcinoma of the breast. An additional theoretical advantage is sterilization of the most active cells, thus diminishing the chance of spread at operation.

The status of postoperative irradiation is too involved to warrant a definite stand at this time. There is evidently a distinct trend to limit routine prophylactic postoperative therapy to those cases which are particularly suitable because of the youth of the patient, the marked sensitivity of the tumor or the incompleteness of the operation. Others would do better with expectant treatment, reserving radiation against definite evidence of recurrence or metastasis. This policy preserves the skin and subjacent tissues so that the large dose necessary actually to treat a metastasis may be safely administered when it becomes necessary to do so. It seems reasonably certain that the small routine pro-

phylactic doses generally employed have little if any effect.

CONCLUSION

Radiation therapy is a valuable weapon in the therapeutic armamentarium and must be administered with, at least, average skill and judgment. It is not like sprinkling tonic on a bald head.

CHILDHOOD TUBERCULOSIS*

CECIL LORIO, M. D.

BATON ROUGE, LA.

It is not my purpose to theorize on the subject of childhood tuberculosis, but rather to present in as concrete a form as possible a problem that at the present time threatens our American civilization with health disaster and retrogression. If human progress is, in any manner, commensurable with healthy mind and body, then it behooves those of us upon whom responsibility is thrust, to muster our forces of defense against that devastating and dreadful white plague, which is threatening our children and destroying our youth.

The history of ancient civilization reveals its ravages. Egyptian mummies conclusively prove its deadly work 1600 years B. C., and Chinese historians record it six centuries B. C., thus being recognized long before medicine became a science. Hippocrates and Galen, in the earliest medical records, gave excellent clinical descriptions of advanced cases. Sylvius (1614-1672) noted the characteristic symptoms of the disease. Each century has borne fruit to further knowledge until in 1882 Koch's epoch-making discovery of the tubercle bacillus was presented. For 2,000 years the disease was considered incurable and until recent years heredity was regarded as the chief factor. The progression of medical knowledge in recent years has advanced by multiples and today certain principles and facts must be accepted without question, that is: Tuberculosis is a disease of humans and certain animals whose etiology is the tubercle bacilli, transmitted to and from man regardless of age, sex or color.

For years a constant warfare has been waged against tuberculosis and with gratifying results. The drop in death rate of all forms of tuberculosis from 213 per 100,000 in 1905 to 76 per 100,000 in 1929 has stimulated the general public for more complete protection against it. A curious paradox of the depression is that apparently contrary to our previous experience and belief the death rate from tuberculosis has not risen. It has been preached for years that poverty and tuberculosis go hand in hand. Yet even after three years of lowered living standards from 1930-1933, the tuberculosis death rate continued to fall steadily. This mortality decrease, however, is in the adult type, where the greatest efforts to the eradication of this disease have been directed. Heretofore, within the past few years, little attention has been directed towards tuberculosis in children. In view of the fact that the majority of cases of tuberculosis in adults is the aftermath of a childhood infection, it naturally directs our attention to the age when most infections begin, childhood, and thereby presents a compelling challenge to the medical profession.

NUMBER OF CASES

It has been estimated that there are in the United States 400,000 tuberculous children and 850,000 suspected cases with the incidence of infection among school children ranging from 10 per cent to 90 per cent in different cities and states depending upon the opportunity for exposure to the bacilli, while on the other hand the clinically manifest tuberculosis among the same group of school children varied from $\frac{1}{2}$ per cent to $3\frac{1}{2}$ per cent. Only recently has much emphasis been placed on tuberculosis in infants and children because of the usual absence of the well known characteristic symptoms of the adult type, and consequently it has been unrecognized. With the advent of roentgen ray and tuberculin test, great strides have been made and today many of the so-called minor ailments are found to be the result of unrecognized tuberculosis.

TERMINOLOGY

Numerous terms have been coined to describe childhood tuberculosis, such as juvenile, puerile, infantile, tracheobronchial, hilar, primary complex, Ghon's tubercle and others. So

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confusing were these almost synonymous terms that the American Sanatorium Association in May 1929 adopted a resolution designating the term "Childhood Type Tuberculosis" to be used in describing the diffuse and focal lesions in the lungs and adjacent tracheobronchial nodes that result from a first infection of the pulmonary tissue with the tubercle bacillus.

PATHOGENESIS

Infants and children for the most part are infected with tuberculosis from some exogenous source. Literature reveals a few records of infantile tuberculosis at or before birth due probably to some pathology of the placenta of a tuberculous mother, but indeed such cases are by far in the minority. It is generally conceded that the first infection of the child is usually received from another infected person or carrier by sneezing, coughing, kissing and other means of contact. These carriers are constantly showering out the bacilli and by constant exposure a child becomes infected. When the mother is tuberculous the incidence of infection is higher, and it necessitates removal of the child immediately after birth to prevent the disease. The bacilli reaches the child for the most part through the respiratory and digestive system, human and bovine type respectively.

When the bacilli enter the body many of them will be eliminated without finding lodgment, but after many such exposures they gain access to the tissues and the body forces begin to react, establishing allergy. This allergy is first noted several weeks following the infection, which interval is called the pre-allergic state, and is not demonstrable by any known test. The allergic state or the immune state is determined by the use of the tuberculin test. This test when positive is a proof that the tubercular organism is in one's body and liberating substances into the absorptive system, stimulating an allergic state. Allergy represents a hypersensitiveness of the tissues to the tubercular bacilli protein, and renders one partially immune to re-infection.

This last statement however should be modified, because at present there are two schools of thought of different opinions. The older, or European school, holds that "It is a good thing for an adult to have a positive tuberculin test."

This European hypothesis that allergy created by a first infection means increased resistance should, however, be understood to be a relative resistance since thousands of people with positive tuberculin tests die of tuberculosis. On the above assumption of allergy meaning increased resistance, they argue against any program of tuberculosis control which attempts to eliminate the disease, on the theory that if the disease were ever re-introduced the population would have lost its resistance. The other, a minor school of thought, chiefly American, opposes their views in that allergy and immunity are entirely different and that allergy is definitely harmful. In support of this theory Myers gave convincing evidence to support it. He found that tuberculin positive children develop adult type disease in later years five times as often as similar groups of tuberculin negative children. He interprets a positive tuberculin reaction as double liability, first because of endogenous re-infection and second because of allergy, which causes destructive types of lesions. Considering the opposite views of the American and European schools, it should not be forgotten that tuberculosis is tuberculosis regardless of the age of the patient, and, in finding tuberculosis, the physician should never limit his examination to one single method but should use every facility at his command. Either of two solutions may be used: P.P.D. (purified protein derivative) using first 0.000, 0.002 mg. then 0.005 mg. or old tuberculin in 1:1000 and 1:100. However, the Committee on Tuberculosis of the American Association of School Physicians has recently recommended the P.P.D. solution as first choice.

A positive skin tuberculin test is conclusive that one is infected with the tubercle bacillus because the allergic state could not exist without an infection being present. However, there is no sharp line, irrevocable distinction between tuberculous infection and tuberculous disease and it is necessary to use in conjunction with the tuberculin test, the roentgen ray, history and symptoms.

Statistics prove conclusively that the intradermal or Mantoux test is the most delicate and reliable. In spite of the child's fear of the needle I use it exclusively with my patients, reading the reaction at 24, 48 and 72 hours fol-

lowing the injection of 0.1 c.c. of solution varying the strength with the indication.

SITE OF INFECTION

The usual site of infection is the lung and hilar glands. The bacilli, lodging in the parenchymatous tissue of the lung, usually at the periphery, set up a local reaction forming a tubercle. In favorable cases this may remain very small and become completely encapsulated with fibrous tissue with ultimate calcification. If resistance is poor the diseased condition may spread or the single focus may give rise to multiple foci of infection with the involvement of large areas of the lung. But, in the majority of the cases, fortunately the tubercle becomes well walled off by the protective forces of the body, fibrin and calcification and thereby remains quiescent, thus protecting its harmful by-products from the remaining body tissue, being known as Ghon's tubercle.

In childhood type tuberculosis the hilar glands are always secondarily involved, infection traveling through the lymph channels and thence undergoing the same pathologic changes as does the primary focus to point of calcification. Fortunately nature has provided youth with tremendous resistance to tuberculosis and only rarely does the first infection result in serious consequences. It is thought that the first infection renders one allergic and partially immune, thereby more resistant to subsequent infection than one who is non-allergic. Surrounding this principle originated the B. C. G. experiment of Calmette's in preventive vaccination with attenuated culture of tubercle bacilli. The B. C. G. is administered to tuberculin negative subjects, orally, subcutaneously or intradermally to create an allergic state or tuberculin positive reaction. Many favorable results are reported here and abroad but the material is not sufficiently perfected for general use. Unlike adult tuberculosis childhood type tuberculosis may present few or no outstanding diagnostic symptoms or signs. The tuberculin test demonstrates the occurrence of tuberculous infection and the roentgen ray examination in many instances defines the anatomic extent and severity of the lesion. At times, much to the physician's chagrin, these two diagnostic aides have revealed the widespread occurrence of grave tu-

berculous infection in children who were well nourished, symptomless and apparently in good health.

SYMPTOMS AND ROENTGEN RAY FINDINGS

The symptoms most commonly noted are: Undue fatigue, temperature, cough, pleurisy with effusion, nervousness, lack of appetite, frequent colds and lassitude. Physical signs are nearly always lacking. Although one, two or more symptoms may be present, it must be noted that a child may harbor a severe tuberculosis with normal weight and none of the above symptoms. It is therefore incumbent upon the doctor to make a diagnosis from the tuberculin test and the roentgen ray in the absence of symptoms and to compile a list of symptoms to be used as accessory diagnostic data, should there be a border line case.

As previously mentioned, the roentgen ray is of paramount importance for without it a positive diagnosis cannot be made. The reading of a roentgenogram should be done only by one who is competent and also familiar with the appearance of many chest films and who uses extreme caution in search of the intricate details. Together with a chest plate he should be supplied with complete history as well as the tuberculin test results, for without the cooperation of the physician it is often impossible for him to give a fair and unbiased evaluation.

TYPE OF LESIONS

The lesions of childhood tuberculosis (McPhedran) may be grouped as follows:

- (1). Focal, caseous or calcification: Ghon's tubercle associated with lymph node involvement.
- (2). Consolidation of a lobe or wedge, progressive or unstable, associated with lymph node involvement.
- (3). Consolidation of a lobe or wedge, retrogressive and benign sometime lymph node seen.
- (4). Diffuse tuberculous infiltration with associated tracheobronchial node involvement.
- (5). Miliary tuberculosis, chiefly in infants with associated caseous nodes.
- (6). Tracheobronchial lymph nodes, uncalcified, with associated but not demonstrable lesions.

- (7). Tracheobronchial lymph nodes, calcified, with associated lung involvement which may be obscure.
- (8). Adult type apical infiltration of children and adolescents with associated lymph node involvement.

Childhood tuberculosis is that type which results from a primary infection, usually occurring in children, and involves the parenchyma of the lung with associated tracheobronchial lymph node involvement. This tends to calcify, leaving trivial or no scars except for the foci of infection. The lymph nodes may form a large mass. Occasionally the tubercular process in time may penetrate the capsule and invade the surrounding tissue or break through into a bronchus and the caseated material may be aspirated into the lower parts of the lungs, setting up a new area of infection. However, these primary infections tend to calcify within a relatively short time. The prognosis is usually very favorable. This is indeed a contrast to the adult type which results from a continual or re-infection. It occurs chiefly in adults, with localization usually in the upper third of lung. It is not commonly associated with tracheobronchial lymph node involvement but has a tendency for the caseous lesions to form cavities and on receding to produce fibrous tissue scar. The prognosis of the adult type, when found in children, is very unfavorable.

Even though the pulmonary tissue is the usual battle ground of tuberculosis, it sometimes happens, through lack of body force resistance or inadequacy of the lymph node filters, that the bacilli enter the blood and lymph channels and are conveyed to other parts of the body. Thus, there are the complicating and often fatal types, as of the peritoneum, meninges, joint, bone or whatever organ may be involved. Other than these complications, the childhood type of tuberculosis should not and is not considered with the dread and fear as that of other forms resulting from a re-infection. The first infection usually subsides with ordinary care and treatment directed towards well being and general resistance of the child. However, with renewed or continual re-infection the adolescents and young adults, after fruitless attempts to scale the wall, with broken

spirit and bent bodies take on the hectic flush and pass from this stage of life with no reward for their hard-fought battle.

SUMMARY

In view of the fact that most of the deaths occur between the age of 15 and 45 and that these are mostly the result of re-infection and unhealed processes and because the adult carriers are the common source of infection to children, is it not the physicians' duty to protect the oncoming generation by prevention, early diagnosis and adequate treatment and thereby reduce the mortality? In a last word message to the general practitioner Osler said: "The leadership of battle against this scourge is in your hands. Much has been done, much remains to do. By early diagnosis and prompt symptomatic treatment of individual cases, by striving in every possible way to improve the social conditions of the poor, by joining actively in the work of local and national anti-tubercular societies, you can help in the most important and the most hopeful campaign ever undertaken by the profession."

DISCUSSION

Dr. E. A. Socola (New Orleans): There are three points in Dr. Lorio's paper that I think should be stressed. First, is the character of primary infection in childhood tuberculosis, whether the first infection constitutes a point of advantage or disadvantage in racial immunity. I agree with Dr. Lorio that it is a disadvantage, that it constitutes a hazard to the individual so affected; that is, that it far outweighs the advantage of racial immunity so confirmed.

Secondly, the primary infection of tuberculosis is found not only in the lungs and in the tracheobronchial glands, but also often can be demonstrated in other tissues at autopsy, such as the bone marrow, kidneys, adrenals, brain and lymph nodes. The importance of this dissemination of the primary infection lies in the fact that it prepares the way for the development of this disease in the tissues away from the lungs, such as tuberculous meningitis and osteomyelitis, and the latter may develop when the infection appears dormant, apparently inactive, or cured in the lungs.

The third point I should like to bring out is the question of preventoria and some accounts of children with first infection. It is the consensus of opinion today that these are unnecessary.

Dr. C. J. Bloom (New Orleans): There are a few points I should like to stress in relation to this disease in the child. For many years I have

been using the so-called d'espine's sign, which I have found to be of great advantage, realizing that in the child, especially the infant, the antero-posterior diameter of the chest is relatively small and there is usually a hyperplasia of the glands of the chest. One can realize therefore that the slightest infection of the glands of the chest would give an early sign, which perhaps would not be true in the adult. If that is true we can readily realize that if the stethoscope is placed parallel to the vertebra and one listens carefully beyond the seventh cervical in the infant and beyond the second dorsal in the older child, bronchial breathing and whispered sounds can be detected and must be accepted as a positive d'Espine's sign. If there is a positive d'Espine's sign, it need not incriminate tuberculosis, but at least it will tell us that there is a hyperplasia of these glands. If there is a hyperplasia of these glands, we must offhand eliminate the unusual glandular involvements, such as Hodgkin's disease, blood dyscrasias, sarcoma, and syphilis. After we have eliminated the unusual hyperplasias, then we must make a differential diagnosis between the tuberculous and non-tuberculous adenopathies of the chest.

Fortunately for us, these different types subdivide themselves into groups according to symptoms. We might have the type of child who, for no reason at all, has a periodic elevation of temperature and a secondary anemia. There is a second type that has a cough, which simulates whooping cough. There is a third type that has a recurring bronchitic cough, and a fourth type that has a recurring asthmatic cough. Any one of these four groups might, on the one hand, be tuberculosis and, on the other hand, be a non-tuberculous adenopathy of the chest.

Dr. Lorio mentioned Ghon's tubercle. I do not know of any book that has helped me more than a book I purchased about fifteen years ago called "Ghon's Childhood Tuberculosis," which is based on postmortem findings alone. If for no reason other than the law which I read in the introduction, the book would have paid for the purchase of it. There is a law in the introduction, Parrat's law, which states that there is never tuberculosis in any part of the body without there being primarily a tuberculous infection of the glands of that part. That is the reason I have brought to your attention the question of d'Espine's sign.

Lastly, there is the question of contact. Recently, in my practice I have found that although the parents anticipate the birth of their children by selecting obstetricians, pediatricians and the purchase of Frigidaires, the seeking of certified milk and the building of a special dormitory room for their children, the most important part of the child's consideration has been omitted, namely, the medical examination of the one who is to take care

of a particular child. I could name specific instances of well-to-do people who have nurses, who have tuberculosis and other diseases, for their children. At this time I have several cases of scrofula. Dr. Bernhard happens to know one of them, where he helped me considerably in diagnosing tuberculosis in a nurse who was caring for a particular child. We must have the servants, who come in contact with our children daily, physically examined.

Dr. P. R. Gilmer, (Shreveport): The Society has an unusual privilege of a guest who is visiting me, who is internationally known for his researches in tuberculosis, and I would ask the privilege of the Society to allow Dr. S. A. Petroff, who has spent many years of his life in the Trudeau Sanatorium studying tuberculosis, a few minutes to speak on this very important subject.

Dr. S. A. Petroff: I was struck by the remark: "The general purpose of the paper is to show need of protection for children."

I have spent twenty-five years in studying tuberculosis, especially with reference to immunizing young babies or children against tuberculosis. Some of you know the controversy I got into with the Pasteur Institute and Professor Calmette on vaccination. I was in Paris in 1928 and also in 1930 before the League of Nations, trying to stop the adaptation of Calmette's method of vaccinating babies. I have worked for a number of years immunizing babies to help them kill tubercle bacilli. Dr. E. A. Park, at Hopkins, is still continuing this experiment.

The problem of tuberculosis is still in your hands. Sociologists have done a great deal, but the problem is still in the physicians' hands. There is no question that children are still infected with tubercle bacillus. Living conditions are much better. We know a little more about contact infections and are able to prevent the widespread of the disease, and we diagnose the condition earlier.

All of you know that if it is a small infection, at proper intervals that child will develop partial immunity. I do not believe there is a racial immunity today. I think there is a proper spacing between dosages of infection. Still I am not convinced that infection with living organisms can protect human beings, because it is like a three-inch sword. We may have protection and at the same time we may have complete dissemination of a few organisms that are in the body, and we have the disease tuberculosis.

I personally have changed my views in the last ten years, and I believe that allergy due to the living tubercle bacilli is not essential to produce a proper immunity in the human race. I would like to see absolute eradication of the tubercle bacillus, because of infection in children.

I think the whole work of tuberculosis still rests

in the physicians' hands. If anybody comes to the office with a persistent cough, look for the tubercle bacillus. If you find tuberculosis in that man, examine the whole family.

I find Louisiana is doing very little for tuberculosis, and I am sorry to say that Louisiana is far behind most of the other states. Think of a large town like Shreveport having only 100 beds for tuberculosis. I think you ought to do something about providing more beds and doing more work in tuberculosis.

Dr. R. A. Brown (Montgomery, Ala.): I am very much interested in the problem of childhood tuberculosis as it affects our generalized health programs. Dr. Lorio has shown that the problem of childhood tuberculosis presents one approach to tuberculosis control, but two points in this regard should be stressed. Firstly, with infection being so widespread we must reduce the problem to a practical consideration if progress is to be made. Open sources of infection must be recognized and closed to prevent the further development of childhood tuberculosis. Adult case finding on a large scale is called for.

Secondly, the expenditure of tax monies for the operation of preventoria should be carefully evaluated. Dr. Myers and others associated with the Lymanhurst School for Tuberculosis have shown that the preventorium does not necessarily build up a lasting resistance in children to tuberculosis. Where so little is being spent for the hospitalization of open cases of tuberculosis we are not justified in spending public funds in this way. Breaking of contact is the main objective in preventing childhood infection and its more serious sequelae.

In diagnosing childhood tuberculosis the importance of the oblique film should be stressed. Lesions of the tracheobronchial glands are best shown in this way. The cost is increased by this procedure, but oblique films are well worth the added cost.

I would like to "Amen" the statement made that nursemaids and those in close association with our children should be studied for tuberculosis. State clinic facilities will soon be available for this work and it is hoped that the physicians will make full use of the clinic in this respect.

Dr. C. M. Jarrell (Alexandria): We have had outlined the various stages and phases of the disease, and the symptoms were eminently described by Dr. Bloom. When we learn all this, we want to know what to do. I believe the watchword should be put in the mouth of every man, woman and child in every home in the nation in a prophylactic way, how tuberculosis is acquired. Naturally, the younger the individual, the more easily is he infected. The two day old child is more susceptible than the two year old child.

In Alexandria I had some first-hand information

on some little children. I was satisfied where the infection came from in tracing the foci. When they demolished the old Veterans' Hospital down there, one of the workmen who was helping to tear down the buildings saw some dominoes that the tuberculosis patients amused themselves with, and he thought they would be excellent for his children to play with. He gathered up a lot of them and carried them over to his home.

In a few months, what happened? The older of his two children developed acute miliary tuberculosis. Fortunately, or unfortunately, I did not lose this child, but I treated it just a few weeks before it died, and I think another doctor would up with it. The main point is to put that watchword into the mouth of every man, woman and child in the world.

The health doctor, I believe, brought out the importance of contact. You cannot do anything with this child with tuberculosis, as long as you have a contact within the home. If one of the parents has it, you must check and remove the exposure of that parent or child before you expect to get anywhere with that child.

Dr. H. R. Unsworth (New Orleans): It has been my feeling that often pediatricians too quickly remove an infant from breast feeding. There is a possibility that substituting a faulty artificial feeding on occasions not alone predisposes the infant to tuberculous lesions, but accounts for nutritional disorders of the central nervous system in children. That it is imperative to remove an infant from the breast in a tuberculous mother, I, of course, understand.

Dr. Cecil O. Lorio, (In conclusion): I think the most important thing concerning the diagnosis of tuberculosis is the tuberculin test and the roentgen ray, and I might lay stress again on the roentgen ray. I am not capable of reading a roentgen ray plate to the satisfaction that one should be read when looking for tuberculosis in a child or an adult. I do not think the average man here is capable of it. I think the roentgen ray man should be competent, and one picture should not be conclusive as to the final diagnosis of tuberculosis.

Contact in the home is probably the most common cause of childhood tuberculosis. The organization of sanatoria, expensive or not expensive, I think, is minor as compared to the procedure of case findings. The Anti-Tuberculosis League, in putting on the case-finding campaign, will do more with the doctors and with tuberculosis than any sanatorium for children could ever do.

I am glad Dr. Petroff did not disagree with me in his opinion as to the allergy and immunity formed by the first infection.

Another thing is that if a child under six months of age has tuberculosis, the prognosis is very bad

anyway. If the contact is from someone outside the family, certainly I do not see why the child should be removed from the breast, because we accept breast milk as best, as containing the most immune bodies, and so forth. If the mother has tuberculosis, I think definitely the child should be taken from the breast.

THE TREATMENT OF SCHIZOPHRENIC REACTIONS WITH METRAZOL† A PRELIMINARY REPORT

T. A. WATTERS, M. D.,
GRACE A. GOLDSMITH, M. D.,
and
L. A. GOLDEN, M. D.
NEW ORLEANS

New and potent therapeutic procedures have been developed in the past few years in the management of schizophrenic reactions. One of these is the induction of convulsive attacks by the administration of metrazol.

The rationale of this type of therapy rests on the premise that there is a biologic antagonism between the reactions of epilepsy and schizophrenia. In 1929 Nyiro and Jablonsky¹ observed that in patients with epilepsy who developed schizophrenic reactions, the convulsions became infrequent and often disappeared. Steiner and Straus¹ in a study of 6,000 schizophrenic patients observed that epileptiform convulsions were extremely rare. Muller¹ in 1930 reported two cases of catatonia which recovered after spontaneous epileptic convulsions. As a result of these and his own observations, Meduna¹ evolved the method of treating the schizophrenic reactions by producing convulsive seizures, his first work being published in 1934. He originally used camphor as the convulsant drug and later pentamethylene tetrazol (also designated cardiozol or metrazol). Experimentally this drug has been found to stimulate the vasomotor and respiratory centers in normal animals and has been used clinically in small doses as a circulatory and respiratory stimulant. In 1937 Meduna reported the results in a series of 110 schizophrenic reactions in which the duration of

the disorder varied from six months to over five years. Remissions were obtained in 54 cases. A few isolated reports of other workers have appeared in the German and Italian literature. Finiefs,² in England, has recently used this method with fairly good results, and Gillies³ of the same country has recorded some preliminary observations. In the United States there are few reports as yet of this method of treatment. Friedman⁴ is using both camphor and metrazol and has reported the results in 20 unselected patients, 15 showing sufficient improvement to be returned to their previous environment. At a recent meeting of the Central Neuropsychiatric Association good results were reported by Low and his co-workers both in the use of metrazol and of insulin shock therapy, as compared to methods which were used previously in the treatment of "non-organic" psychoses.

TECHNIC

The method, as it is being used by us, consists in the injection intravenously of a 10 per cent solution of metrazol, the initial dose selected being 5 c.c. This is injected as rapidly as possible into an antecubital vein, using a large bore needle (as a rule a No. 19 needle is satisfactory). It is advisable to see that the patient's bowels have moved prior to an injection and to give metrazol when the stomach is empty. If the initial dose (5 c.c.) fails to produce a grand mal attack, it is gradually increased. When a convulsive seizure is obtained the dose is maintained as long as the desired reaction ensues. The maximum dose which may be given safely is 14 to 16 c.c. The lethal dose is 20 to 40 c.c. The injections are given every other day or every third day, depending upon the character and degree of the reaction. Meduna gives a series of 15 to 20 grand mal attacks regardless of the response of the patient, or else after improvement is apparent three additional convulsive seizures. During the treatment no sedatives are given to the patient and sodium bicarbonate is prescribed in sufficient amounts to keep the urine alkaline. It is thought an alkaline reaction of the tissues facilitates the effect of the drug.

EFFECT OF DRUG

Almost immediately after the intravenous injection of metrazol (within 10 seconds) a grand

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or petit mal seizure ensues. The grand mal attack may be initiated by acute anxiety, amazement, spitting, coughing, sniffing, or aura of an olfactory or gustatory nature; the patient may sit up in bed and wave the arms. The tonic phase follows, and is usually initiated by an opening of the jaws, at which time a soft mouth gag should be inserted and the angles of the mandible held forward by the attendant. The clonic phase lasts about a minute, is often quite severe, and is followed by relaxation. At times there is incontinence, and often immediately after the clonic phase automatic movements occur, which last for a few minutes up to an hour. These may consist of waving the arms, making attempts to get out of the bed, fear, shouting or screaming, or erotic movements. A post epileptic confusional state may occur, which will last for several hours. The first attack which the patient has usually sets the pattern for the subsequent seizures. In a petit mal attack there may be tremor, sitting up in bed, staring, movements of the arms or legs, fear and often unpleasant hallucinations. During the convulsion the patient should not be restrained but merely protected from injury. There have been no deaths reported in several thousand convulsions and the only complications have been dislocation of the jaw or shoulder in a few instances, nausea and vomiting, and transitory tachycardia. As a precautionary measure, chloroform, sodium amytal, adrenalin and digalen are kept ready for use at the time of the induction of the seizure.

TYPE OF CASE

If therapy with metrazol is to be undertaken, a careful selection of patients is essential. The individual should be young, the oldest so far recorded being 46 years of age. He must be in good physical condition and without evidence of impairment of the cardiovascular or renal apparatus. Complete laboratory studies are made on each patient, including urinalysis, blood count, blood chemistry (urea and sugar) and frequently a roentgen ray of the chest and an electrocardiogram. Contraindications are acute febrile illness, menstruation, a decompensating cardiovascular mechanism, diabetes, syphilis, renal diseases, anemia, cachexia, or the history of a previous intracranial injury which was associated with unconsciousness.

PROGNOSIS

The prognosis according to Meduna depends upon the duration of the illness, being better in cases of less than six months' duration. He reported improvement in 96 per cent of the individuals who were treated within a year after the development of a schizophrenic reaction. He also states that the likelihood of cure is in proportion to the patient's likelihood of convulsions. Friedman and the English writers believe that the stuporous and catatonic patients show the best response. In a discussion of the reason for the therapeutic effects of convulsive seizures, Meduna states that it may be the shock effect of the convulsion but favors the hypothesis that it is due to a change in the chemical constitution of the organism. Gillies suggests that the results may be due to non-specific stimulation of cerebral cells. Friedman's hypothesis is that the beneficial effect may be due to a breakdown of functional barriers to proper nutritional assimilation or utilization in the brain.

These various hypotheses all have as their fundamental foundation a physiologic or biochemical conception. One of the authors (Watters) feels that a consideration of the effect of the treatment on the psychobiologic functions, should be included in formulating an explanation of the therapeutic results. He believes that by resorting to a sudden severe physiologic reaction which challenges the instincts of preservation and the more fundamental processes of life, the patient is diverted from his abnormal processes of thought and his egocentric trends. The result is the reappearance of more normal methods of adaptation which were formerly used by that individual in adjusting to his environment.

CASE REPORT

The following case is presented because of the typical reactions which occurred following the injection of metrazol and because of the marked improvement which was shown.

The patient is an unmarried woman of 31 years of age, whose illness began rather acutely in June, 1937, four months prior to her admission to the clinic. Her previous history revealed that she had an eighth grade education and worked satisfactorily as a saleslady for ten years. She was reared by a maternal aunt, as her mother died when she was a small child. Although rather shy and sub-

missive, with a paucity of interests and ambition, she had numerous friends and normal church and environmental contacts. Five years ago she had an unhappy love affair. Shortly before the onset of her present illness she had her fortune told at cards during which she was stirred by the suggestion that a death would occur in the family. An interesting notation is that the patient's mother spent four months in a mental hospital at the age of 21. The present illness began abruptly when the patient was found wandering about at her work crying and bewildered. Thereafter she appeared to be puzzled and perplexed. She became seclusive, fearful, and showed numerous ideas of reference. Her thinking and reading were preoccupied with crime, and she had numerous persecutory delusions. There were auditory hallucinations, a sensation of "electric shocks" passing through her body, and passivity feelings. She received special messages over the radio and felt that she was forced to do things against her will. At times she was mute and refused to eat. She attempted suicide on four occasions "to save her family." The mental status examination in October 1937 showed apathy, lack of spontaneous speech and movement, and a staring, rather expressionless facies. The patient frequently talked to herself and was obviously hallucinating. At times she exhibited fear and apprehension. Blocking and negativism were present and flexibility cereas could be demonstrated. Unsystematized delusions and passivity feelings were elicited, although it was difficult to obtain much of her content. The sensorium was clear. Physical examination, including a complete neurologic check-up, revealed no abnormal findings, and laboratory tests showed no deviation from the normal.

The patient was hospitalized and treatment with metrazol was instituted. The seizures which occurred within five to ten seconds after injection of the drug were characterized by movements of the lips as if tasting something, a tonic and a clonic phase with marked retraction of the head, movements of the facial muscles as well as the arms and legs, lasting about a minute, and followed by automatic movements of champing and chewing, staring, apprehension, and sitting up in bed. Confusion lasted from one to several hours. After the first grand mal attack she seemed slightly improved, more in touch with her environment, less fearful, and to be having fewer hallucinations. After the second major convulsive seizure the patient's condition completely changed. She was a different individual, the only abnormal findings on mental status examination being a few ideas of reference, which disappeared with the third grand mal attack, at which time she showed slight overaffectivity. In all she had twelve major seizures. At the present time there are no abnormalities of behavior, stream of talk, affect, content or sensorium that

can be elicited. Although the final outcome in this individual cannot be predicted, the improvement is remarkable, and the prognosis would appear to be excellent. She will, however, be followed in the out patient clinic for an indefinite period of time.

In an endeavor to understand better the physiology associated with convulsions produced by metrazol, the blood pressure was measured before the injection of the drug, in the interval before the onset of the seizure, directly after the attack, and after 10 minutes had elapsed. The blood pressure prior to injection varied considerably, measuring in millimeters of mercury from 100 to 140 systolic and 80 to 96 diastolic. In the interval before the onset of convulsions the systolic blood pressure was either unchanged or increased about 10 mm. of mercury. Directly after the seizure the blood pressure was markedly increased, measuring in millimeters of mercury from 175 to 200 systolic and from 98 to 120 diastolic. At the end of 10 minutes both the systolic and diastolic pressures approached the level found prior to injection. On one occasion when the patient had a petit mal attack after the administration of metrazol the blood pressure dropped from 132 mm. systolic and 82 mm. diastolic to 92 mm. systolic and 58 mm. diastolic. Marked pallor of the skin which might be indicative of vasospastic phenomena has been observed only once preceding a major convulsive attack. On several occasions, usually during the minor episodes, marked flushing and hyperemia of the face and neck were evident. Although this data is interesting it fails to offer an obvious physiologic explanation of the convulsive attack.

The treatment of schizophrenic reactions with metrazol is still in the experimental stage, and a word of caution seems advisable in regard to the danger of the use of this method by those without experience in the psychiatric field. It is essential that the individuals who are to receive this form of therapy be carefully selected, both from a physical and psychiatric standpoint. The reactions of the patients to treatment must be critically observed and it requires a nicety of judgment growing out of well organized knowledge of psychiatry to determine the details of management as treatment progresses. The method is advantageous as compared to the in-

sulin or hypoglycemic shock therapy because of ease in administration, the fact that the degree of the reaction can be gauged by the careful administration of the drug, and because there is not the necessity for an elaborate set up or personnel. In addition, up to the present time no fatalities have been reported. The method is admittedly an heroic one and a trial over a period of years under carefully controlled conditions will be necessary before final evaluation can be reached. It apparently holds considerable promise, however, as a means of combating the problem of the schizophrenic reaction.

SUMMARY

In summary, the treatment of schizophrenic reactions by means of convulsive seizures induced by the administration of metrazol has been outlined. A case is reported of an individual with a schizophrenic reaction who has shown remarkable improvement under this treatment. Therapy with metrazol offers interesting opportunities for further investigation and engenders a hopeful outlook in a hitherto rather discouraging field of therapeutics.

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ABDOMINAL CESAREAN SECTION

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Recently Reddoch and Howell published a report covering nine years from 1927 through 1935 at Charity Hospital, New Orleans, Louisiana. This was a detailed statistical report and brought forth much interesting information. Since I believe every institution should take stock more or less to see if it could itself be

materially improved, I have prepared a review of abdominal cesarean sections from one of the large northern Louisiana hospitals.

In this review the period of 1930 through 1934 was selected as a beginning five year period. It is to be hoped that henceforth a review of such a nature as this will be prepared at each five year interval. Believing, as stated, in the completeness of Reddoch and Howell's review, I have followed their outline except in one or two places.

During this period there were 50 abdominal cesarean sections performed by different members of a staff of 42 men, the majority of whom do general practice.

TABLE I. INCIDENCE OF SECTIONS				
Year	Total deliveries	Sections	Recoveries	Percentage incidence
1930	187	6	5	3.2
1931	195	9	9	4.6
1932	180	12	11	6.6
1933	165	16	14	9.5
1934	206	7	6	3.7
Total	933	50	45	5.36

In Table I, the incidence of sections by years with the results accomplished are shown. It is noted that in all except two years, 1932 and 1933, the incidence by years is practically the same. Why the predominance of sections with a lower delivery rate in these years cannot be fully explained. A total of 933 deliveries with 50 sections during this five year period is noted, which gives an incidence of 5.36 per cent. There was a mortality rate of 10 per cent for this period. A word concerning this is needed. In this institution a number of charity beds are maintained and some of these deaths might have been avoided had these patients received proper prenatal care before entering the hospital practically on their death bed. Of course, it is to be recognized that this occurs in all institutions and alters a favorable report considerably. At present in Monroe there has been established a Maternity Welfare Clinic where proper prenatal care might be obtained and sections which are elective anticipated.

Table II shows the indications by years divided into multiparas and primiparas. As is the usual case, contracted pelvis is the chief in-

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TABLE II. INDICATIONS

Indications	1930		1931		1932		1933		1934		Total	
	M	P	M	P	M	P	M	P	M	P	M	P
Contracted pelvis	2	2	1	2	0	3	3	5	0	2	6	14
Toxemia	0	0	0	5	0	1	0	2	0	2	0	10
Fibroids	0	0	0	0	1	1	0	1	0	0	1	2
Placenta previa	0	0	0	0	0	0	1	1	0	2	1	3
Hypertension and nephritis	0	0	1	0	2	0	0	0	0	0	3	0
Persistent occiput posterior	0	0	0	0	1	0	0	1	0	0	1	1
Prolapsed cord	0	1	0	0	0	0	0	0	0	0	0	1
Disproportion of fetus	0	0	0	0	0	2	0	0	0	0	0	2
Vaginal stricture	0	0	0	0	0	1	0	0	0	0	0	1
Heart disease	0	0	0	0	0	0	0	1	0	0	0	1
Cervical stenosis	0	1	0	0	0	0	0	0	0	0	0	1
Hyperemesis gravidarum	0	0	0	0	0	0	0	0	0	1	0	1
Gangrene vulva	0	0	0	0	0	0	0	1	0	0	0	1

dication, with toxemia second. The remainder are scattered. There is seen to be a total of 12 multiparas and 38 primiparas. Of these 12 multiparas only three had sections before and these for contracted pelvis. Poor past histories prevent any further elucidation on this point. The majority of patients had some trial of labor and in only three instances was elective section performed in the contracted pelvis group.

TABLE III. TYPE OF SECTION

Year	Classical	Low	Porro
1930	1	4	1
1931	2	7	0
1932	1	10	1
1933	1	15	0
1934	0	7	0
Total	5	43	2

Table III elucidates the type of section performed with a marked predominance of low sections. It is possibly this that prevented a higher mortality rate in the face of obvious infection in many cases. Of the five classical sections, three were for contracted pelvis with two being primiparas and one multipara who had a previous classical section. Of the remaining two classical, one was for toxemia and one for gangrene of the vulva following Bartholin's abscess, both being primiparas. Both Porro sections were primiparas, one for fibroids and one for disproportion of fetus (hydrocephalus) with ruptured uterus.

In Table IV, maternal mortality is shown with a short abstract of each fatal case. As mentioned, a 10 per cent mortality prevailed. Of the five fatalities two were operative deaths,

two non-operative and one cause unknown. Four were primiparas and one multipara, gravida VII, para VI. Peritonitis was the cause of death in both operative cases following low sections. One of these patients was in labor 72 hours with frequent examinations, ruptured membranes and temperature 102.5° at the time of section. The other was a case of toxemia with peritonitis developing after drainage of a cul-de-sac abscess.

In the non-operative cases the multipara ex-

TABLE IV. MATERNAL MORTALITY—
TYPE OF SECTION

Year	Total	Recovered	Description of fatal cases
1930	6	5	Operative death; peritonitis; primipara; contracted pelvis; low-labor 72 hours, membranes ruptured; temp. 102.5 at operation, expired in 72 hours after a stormy course with distension, fever 106°.
1931	9	9	
1932	12	11	Non-operative death; hypertension; nephritis; multipara grava VIII, para VI; low. Full term decompensated on admission. Compensated for two weeks, then section. Expired in 72 hours.
1933	16	14	Operative death; cul-de-sac abscess and peritonitis; primipara; toxemia. B. P. 170/116, albumen 14 per cent, one convulsion, conservative care followed by section. Developed cul-de-sac abscess and peritonitis; expired 14 days postoperatively; twins.
			Non-operative; gangrene vulva; primipara seven and a half months; low section. Died second day of extensive gangrene.
1934	7	6	Unknown death; primipara; contracted pelvis; in labor 36 hours, low section, died suddenly 24 hours later.

pired a heart death and the primipara from the extensive gangrene. The unknown death was a colored primipara who weighed 300 pounds and was in labor 36 hours prior to admission and expired 24 hours after a low section.

A careful analysis of these cases shows that possibly with good prenatal care at least three of these patients might have survived.

I have neglected to include a table of morbidity because if the standard rule of morbidity, that is, temperature above 100.4° for any period, is considered only seven cases or 1.5 per cent were afebrile. However, not many of the febrile cases were septic. A febrile course is expected with the majority of sections following long labors.

TABLE V—FETAL MORTALITY

Year	Living	Still-born	Died	Cause
1930	5	1	0	Prolapsed cord.
1931	7	1	1	Large thymus (stillbirth) six months, premature.
1932	12	0	0	
1933	15	1	1	Died two hours after delivery, mother had heart disease. Unknown, stillbirth.
1934	6	0	1	Died three hours after delivery, unknown.
Total	45	3	3	

In Table V, a summary of fetal mortality is presented as to years. Three stillbirths and three deaths are reported, giving a mortality of six infants in 51 or 11.11 per cent. One case of twins survived. A total of 45 infants were discharged from the hospital in good condition or an incidence of 88 per cent living babies. The stillbirths consisted of one following a prolapsed cord and two premature (one with large thymus). Of the infants who died after birth two were ascribed to unknown causes and one to prematurity.

SUMMARY

1. A review of 50 sections over a period of five years with a mortality of 10 per cent is presented.

2. A predominance of low sections is shown to have possibly prevented a higher mortality.

3. A lower mortality rate might have prevailed had proper prenatal care with expectant section been given.

4. Porro section in two patients was possibly a means of maintaining a low mortality rate.

5. With good prenatal care, the proper care at delivery and continuation of the low section a lowered mortality rate is looked for.

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THE CLINIC OF PROFESSOR RENE LERICHE

MICHAEL DEBAKEY, M. D.*†

NEW ORLEANS
and

ALBERTO SALDARRIAGA**

COLOMBIA, S. A.

In the extreme eastern part of France, tranquilly reposing almost midway between the mountainous Vosges and the Black Forest and hugging the rapidly flowing Rhine with seemingly jealous fervor, is the city of Strasbourg. Apparently predestined to the costly glories as well as the adversities and vicissitudes of military order, this city has veritably lived up to its traditional origin. On this very soil Drusus, fifteen hundred years before the birth of Christ, established a fortified post in the name of the Roman people, with the object of stemming the increasing hostile raids of the savage and incursive Alains, Vandals, and Sarmades who inhabited the land beyond the Rhine. But despite the fact that it has been the center of the arena in which grim-visaged war has played many a leading role, it has progressively developed into one of the most active commercial, industrial, artistic, and educational centers of Europe. Because of its unique geographical position, i. e., at the borders of two rival civilizations, willingly or not, it has always been enriched by the acculturation of one or the other of the two great nations with which it has been alternately united; and it is this extraordinary but harmonious commingling of the rich Teutonic and Celtic qualities that gives Alsace and its great center Strasbourg its characteristic and unique beauty. Far famed as the originator of sauerkraut, renowned for its inimitable pâté de foie gras, and celebrated for the magnificent beauty and stately Gothic purity of its imposing cathedral, this great center has indeed a rightful and deserving place among the first cities of the world.

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But of all of its proud possessions there is none it could display with more pardonable pride than its great University, for here modestly resides one of the world's most advanced centers of education. And no part of this University is more progressive or has a nobler inheritance than the medical school. Constructed on the same grounds and as an integral part of "Hospices Civil," consisting of over fifty buildings, covering over seventy acres of ground, possessing its own electric power, water, and heating system, it is indeed a little city within itself forming one of the world's largest medical centers.

So old is this hospital and so vague are the early records that its origin is lost in antiquity. However, it may be said with some degree of authenticity that it was founded about the year 657 A. D., probably by the Duc d'Alsace Attic or Ettichon, the father of Saint Odile, and was administered by the bishops until the year 1263. At this time the administration of the hospital was given to the city by Bishop Henri de Gérolsack, and fifty years later the hospital was transferred outside the city boundary to its present site. In 1716 it was almost completely destroyed by fire, only the chapel of Saint Evard escaping, which, incidentally, dates back to the fifteenth century and remains yet a monumental commemoration of the admirable courage and unwavering determination of these early workers.

With its reconstruction came a new epoch in the advancement of the medical school which became better organized, more firmly established, and began its rapid strides of progress and development. The chairs of pathology, anatomy and surgery were definitely assigned, and here was founded in 1734 the first school of midwifery in the world. From this time until 1870 it continued to advance rapidly and flourish under the ever productive influence of the French school. During the German epoch from 1870 to 1918, the great zeal and feverish activity that was displayed in enlarging and enhancing the hospital and university has resulted in making it one of the largest medical centers of the world today. To attempt a further detailed historical and descriptive discussion of the hospital and university would be

inopportune as well as inexpedient. As our interest is admittedly confined, we may risk being invidious and limit the description to one of the most conspicuously advanced and scientifically progressive departments, namely, the "Clinique Chirurgicale A". It may be parenthetically stated that the surgical department consists of two divisions: "Clinique Chirurgicale A" and "Clinique Chirurgicale B," but we are solely concerned with the former.

The present edifice of "Clinique Chirurgicale A" was completed in 1881 and contains 205 beds. Constructed in simple style with large spacious hallways and vast airy wards, it possesses two operating pavilions, one of which is provided with a huge amphitheater; modernly equipped laboratories of surgical pathology and experimental surgery, its own department of radiology, an out-patient clinic, a urologic department, and a separate building devoted to septic cases.

However, our interest in this clinic is aroused not by its modern facilities or its simple style of construction, but by the man who modestly works and presides as its director. Celebrated throughout the surgical world for his prolific and fructiferous activities, his unceasing originality of thought, his numerous perspicuous disquisitions, and his perennial expositions on the surgery of the sympathetic nervous system, Professor René Leriche has made this clinic a cynosure for students from all corners of the world.

BIOGRAPHICAL SKETCH OF LERICHE

In order to appreciate more fully the quality of his work it is necessary to know and appreciate the personality of this really great man, and to do this it would not be inappropriate to give a brief biographical resumé. Born on October 12, 1879, at Roanne, France, he completed his early medical training at the University of Lyon and immediately became the student of Jaboulay, who was early attracted by the unusual ability of this young interne. However, Jaboulay's untimely and tragic death occurred soon afterwards and he then became the student and later the collaborator of that master surgeon, Antonin Poncet, until the latter's death in 1913. It was under such careful training and in such a brilliant environment that the firm foundation for

his later development and success was laid. At the termination of his internship in 1906 he presented his thesis: "The Resection of the Stomach for Cancer", which remains yet a classic, and in 1910 he became Professor Agrégé. During the late War he devoted his entire time to military surgery and as a result of his self-sacrificing and distinguished services, both the French and Belgian Governments bestowed on him one of their highest honors. After the World War he returned to Lyon and remained there until 1924, when he was called to Strasbourg to occupy the chair of surgery, which had recently been left vacant by the untimely death of Sencert, and on which had previously sat such illustrious figures as Flamant, Cailliot, Begin, Sedillot, Madelung, and Boeckel.

Since his establishment here he has continued to add many achievements to his numerous innovations and advances that are so characteristic of his surgical enterprise, veritably conforming to the exordial remarks of his inaugural address in which he stated: "Vous ne me connaissez pas. J'avais besoin de prendre contact avec vous autrement qu'en paroles. J'ai préféré que vous me jugiez d'abord aux actes."

No better insight can be obtained to his sterling qualities, his innate character, and his idealistic attitude, than to quote him again from this same eloquent address: "Le professeur de clinique chirurgicale a une triple tâche à remplir. Il doit soigner de son mieux les malades qui lui sont confiés; il doit apprendre aux étudiants tout ce que peut leur être utile dans leur vie professionnelle future; il doit enfin tâcher de faire progresser la chirurgie. L'avenir me permettra, je l'espère, de vous le montrer." And he has indeed, for he has achieved these three idealistic tasks in his own characteristically modest but undeniably successful manner.

The generous personality of Professor René Leriche is clearly revealed by his noble and imposing Beethovenian countenance. The high forehead, the clear blue, kind, but penetrating eyes, and the strong, determined chin vividly portray and reflect his keen sense of humor, his effervescing vivacity, his beneficent cordiality, his contagious enthusiasm, and his indomitable resoluteness. The reassuring confidence and

the understanding sympathy expressed at the patient's bedside is only commensurate with his unlimited tolerance and patient consideration towards his students. The spirit of camaraderie among his assistants, residents, and internes, the prevailing atmosphere of enthusiasm in his clinic, and the worshipful admiration of his patients vividly exemplify the charming personality and the admirable characteristics of this great man.

It is in his clinical lectures that he impressively demonstrates his incomparable ability as a masterful teacher. Although capable of beautiful oratorical eloquence, before his students he speaks in a concise and transpicuous manner harmoniously blending scientific simplicity with pleasing rhetoric. With explicit clarity he lucidly correlates the underlying pathologic physiology with the more obvious clinical manifestations, indelibly impressing in the minds of his students these essential and fundamental surgical principles.

In the operating theater which is finished in an agreeable ensemble of pale blue, one is strikingly impressed by the sheer simplicity as well as the technical perfection of the delicate operative manipulations of this master surgeon. Although a better demonstration of more dexterous or less injurious dissection on the living subject would be difficult to conceive, he more forcibly stresses the primary essentials of modern surgery, that the present day surgeon must no longer be content with being a mere technician. He must attempt to correct the consequent manifestations of the patient's disorders by first a thorough study and a comprehensive correlation of the underlying pathologic anatomy with physiologic function. And this statement so aptly illustrates the thorough manner in which each patient in his clinic is carefully studied in an attempt to discover the relative importance of the basic physiologic and pathologic processes, and thus ascertain the best corrective measures.

The philosophic dissertations, the experimental contributions, and the surgical expositions and monographs of Professor Leriche are too numerous to list, and cover an astonishingly wide range of surgical endeavor. In all his work there is one outstanding characteristic which portrays the ideal and trend of modern

surgery—the continuous search for a more ratiocinative comprehension of the physiologic disorders consequent to the more apparent anatomico-pathologic processes.

Leriche's earlier publications were chiefly concerned with abdominal surgery, especially that of the stomach. His keen analytical and experimental work has added considerably towards a more rational conception and a better therapeutic attack of peptic ulceration. In collaboration with his former chief, Antonin Poncet, he published a masterful dissertation on surgical tuberculosis. His invaluable contributions on vascular diseases and surgery of the sympathetic nervous system have made his name inseparably linked with this branch of surgical endeavor. As early as 1913 he directed the attention of surgeons throughout the world to the operative procedure of periarterial sympathectomy as a means of improving the circulation of a limb in the treatment of certain conditions consequent to vascular insufficiency. As the procedure was found also to relieve pain, it was quickly and widely adopted before a more rational understanding of the underlying physiologic principles was developed. Naturally the results have been most varied and confusing and Professor Leriche himself, writing in the September issue (1928) of the *Annals of Surgery*, succinctly and truthfully expressed the present status: "The surgery of the sympathetic system meets two kinds of difficulties—those which spring from our physiologic ignorance, those which spring from our pathologic ignorance. On one side we do not know the exact significance of the branches we cut, on the other side we are ignorant, as a rule, of the cause and the exact mechanism of the diseases we wish to cure."

Not long after the late War, his constantly probing scientific interests were directed toward the histo-biologic development of the osseous structures, which resulted in a newer conception of ossification. In collaboration with Policard he presented these more advanced ideas in a compendious and illuminating monograph, "*La physiologie de l'os normal et pathologique*", which shed considerable light on this difficult problem, and opened new sources of possibilities in its therapeutic application.

He has recently become intensely interested in studies of the endocrine glands, particularly the adrenals and the parathyroids, with special reference to their surgical consideration. His studious and perspicacious clinical and experimental investigations have already made him one of the foremost authorities in this newer field of surgical inquiry.

The world-wide appreciation of the untiring industry, the unceasing efforts, and the ever-productive activities of Professor René Leriche are readily evinced by the numerous and deserving honors which have been conferred upon him. Respected by his colleagues, admired by his associates, worshipped by his patients, he will always remain in the hearts of those who know him best, his surgical devotees, as a tolerant teacher and a kind and inspiring master. And when the pages of this chapter of medical history have been completed, his name will appear conspicuously among those who have done most towards advancing modern surgical progress.

MEDICAL FADS AND FALLACIES*

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The science of errors, unfortunately, is a very neglected branch of study. Naturally, one who applies himself to this study has to assume the role of a critic, thereby exposing himself to severe counter criticism. The drubbing that I will get at the conclusion of this paper will be ample proof of the above statement.

It is indeed strange how mistaken ideas become implanted in the human brain and require years of corrective teaching to eradicate them. To paraphrase a familiar quotation, "Some are born faddy, some achieve faddiness and others have fads thrust upon them." This paraphrase seems to hold good with the medical profession. Some physicians have a fallacy complex that no amount of education will overcome. They are born freaks with a kink in their brain, and are destined to make freak doctors. They will be found following all kinds

*Read before the Tri-Parish Medical Society at Lake Providence, La., September 7, 1937.

of cults from glandular crank to chiropractor. Others acquire fallacies because of their desire to be different, to get in the limelight or in the ardent pursuit of the almighty dollar. There will be the type of doctor using glandular and pluriglandular products freely; he has a hobby of giving medicine intravenously, and in his office will be found all kinds of psychologically inspiring electrical appliances. He plays up strong to his fads as long as they will produce a full house and fat fees. Many physicians have walked in these green fields of fallacy. "All we like sheep have gone astray." The desire to be in the swim, not to be out of movement or to be up to date makes many a worthy man fall to the latest fad, whether or not his better judgment approves.

Then, there are those who have fads thrust upon them by their teachers. Medical schools and textbooks are full of fallacies. So many teachers are specialists and each of them is prone to see the afflictions of mankind through the narrow slit of his own specialty. The nose and throat man can trace nearly every malady to some type of orificial sepsis. The cardiographer can hardly find a sound heart. To the tuberculosis specialist, every lung is "a little suspicious." The surgeon thinks the knife is the only therapeutic agent worth considering. The genito-urinary specialist sees mankind through what Gee is pleased to call "a syphilitic fog", and would first demand a Wassermann test for his virgin patient.

Teachers in medical schools should know that every student does not make a specialist. At no period of life is so much time wasted as at school. The teacher of therapeutics requires the students to memorize the seventeen preparations of opium, the head specialist requires the minute distribution of the trigeminal nerve, the genito-urinary man requires them to know every muscle in the pelvic floor and the surgeon insists that the name, distribution and ramifications of the brachial artery be known, all to be forgotten, leaving an aching void when the physician stands by the bedside in an emergency, not knowing anything practical to do.

"To observe keenly, to think rationally and critically, to understand a few fundamental

principles, to express our thoughts clearly in speech and writing, to distinguish facts from fallacies; these are some of the essentials of a medical education." Instead, we have a host of useless junk. Those who have the duty of training the rising generation of doctors have a great responsibility. They should not inseminate the virgin mind of the young doctor with the tares of their own fads and fallacies. Teach proved facts that will be of service at the bedside. It is always well, before handing the cup of knowledge to the young, to wait until the froth has settled, if this metaphor can be appreciated after seventeen years of prohibition.

In many of the older doctors, the urge to stand by the *status quo* is almost irresistible. Contemplate, if you please, the great number of lives sacrificed before doctors awoke to the importance of fresh air in the treatment of pulmonary diseases, or to the superiority of hydrotherapy in the reduction of fevers, or before Brown showed that 97 per cent of all patients are asthenic instead of plethoric and thereby rang the death knell of the blood-letting fad. Many times the physician falls to a treatment because of popular demand, like the chlorine gas fallacy for the treatment of colds, or ed-wenil for all kinds of infections to which human flesh is heir.

The object of this paper is to call attention to some of the fallacies that are still being adhered to by no small minority of the profession. Here in the South, I suppose that quinine is the most used and most abused remedy, with calomel coming as a close second. There are those who believe that every treatment should begin with calomel or other drastic purgative. I have seen it given in large doses to babies with dysentery. This is as irrational as the old practice of bleeding every patient. In treating malaria, we should not wait for the purgative to act before giving quinine, neither should we wait for the fever to go down. Much valuable time may be lost. Regardless of any other condition, idiosyncrasy not excepted, begin the administration of quinine as soon as the diagnosis is made. Do not hesitate to give quinine to a pregnant woman. The malaria is much more likely to cause her to abort than is quinine. In fact, in cases of malaria, quinine

is the best remedy to prevent abortion. It is widely believed that intravenous quinine is a more effective treatment for malaria than when given by the mouth. This has been proved a fallacy, but the difference in the fee collected makes of it a very attractive fallacy.

Should we feed a cold and starve a fever? It is now well known that fever patients should be fed to the capacity of their digestion. Maintenance of nutrition is an essential factor in the treatment of every disease. There are those who still believe that whiskey is an essential remedy in pneumonia. Recent research has conclusively proved this to be a fallacy of the first magnitude. It is of admitted value in the treatment of pneumonia in old toppers. Will treating or extracting a tooth cause a pregnant woman to abort? Not at all likely. She certainly needs the scientific service of a dentist more than anyone else, yet she is required to suffer without treatment because of this fallacy.

There is the vaccine fallacy whose votaries are legion and the enterprising pharmaceutical houses reap a golden harvest from it. Without the least evidence that mortality or morbidity is reduced, literally millions of doses of vaccines are given for colds, influenza, pneumonia, rheumatism, gonorrhea and nearly every other ill to which the flesh is heir. Grave faced consultants will seriously discuss whether phylacogen or pneumococcic antigen should be given in a case of pneumonia when the patient would probably be better off without either. This fallacy appealed to the popular fancy. "Taking the shots" is a new experience and they delight to talk of it. Doctors talk glibly of injecting ten thousand million bacteria and then wonder why the patient died.

Then comes the fad of organotherapy. Here pseudo-science flourishes. The great slaughter houses find a ready market for every by-product from pituitary to gonads. We call ourselves scientific endocrinologists and are too thickheaded and devoid of humor to laugh at ourselves. Glandular treatment lends itself to a wide range of maladies extending from the babe with rickets to the old man who ardently desires rejuvenation for the benefit of his young paramour. Shakespeare was evidently speak-

ing of us when the witches in Macbeth sang of the therapeutic value of:

"Eye of newt and toe of frog,
Wool of bat and tongue of dog,
Adder's fork and blind-worm's sting,
Lizard's leg and howlet's wing."

And what is the general practitioner to do with such a confusion of remedies? It is evident that he will have to use rare judgment in sorting the good from the bad. In junking fads, it must be remembered that some of them may possess merit and, if we are not judicious, the risk is run of throwing the baby out with the bath water. The testing of new remedies should be left to great research laboratories and clinics. Let a remedy or line of treatment stand the test of time before tying your reputation to it and acclaiming it from the housetop.

"Be not the first by whom the new is tried,
Nor yet the last to lay the old aside."

Almost every new line of treatment has been run to death, sometimes to the death of the patient. Our zeal for the new and sensational has resulted in a kind of therapeutic chaos. Witness, if you please, the rapid kaleidoscopic changes in the pharmacopeia. Observe also the large number of new and non-official remedies and likewise the vast amount of therapeutic advertising that reaches the waste basket each day. All kinds of blotters, folders, letters, circulars and samples are showered upon us and often succeed, by a kind of summation of stimuli, in getting us to prescribe a particular drug or food, regardless of its merit.

Even the surgeon has not been immune to the periodic epidemic of fads. The slaughter of the tonsil goes on unabated and a scarred abdomen is rapidly becoming the fashion de luxe. The fad of local infection comes along and leaves in its wake a tonsilless and toothless nation.

Did you ever have a sad faced little woman come into your office and explain that she had been ill for a number of years and quietly tell you that she has had several operations including tonsillectomy, adenectomy, complete odontec-

tomy, cholecystectomy, appendectomy, oophorectomy, salpingectomy, curettage, trachelorrhaphy and a perineorrhaphy. She may well represent a walking exhibition of a fractional dissection, a living sacrifice to the god of surgical fads.

The field of diagnosis has been invaded by many fallacies. There are still those who believe that they can make a difficult diagnosis by feeling the pulse, looking at the tongue and examining the chest and abdomen through several thicknesses of clothing. Autopsy has revealed the fact that there is a wide margin of error even with the closest clinical observation and laboratory technic. The doctor who does not use great care in diagnosis is not worthy of the confidence of his patients. The roentgen ray is not infallible. Based on roentgen ray diagnosis, I saw in one day, a healthy kidney removed and laparotomy done for a duodenal ulcer that did not exist. "Exploratory incision" still occupies a prominent place on our surgical bulletin boards. Some of the serologic tests are notoriously inaccurate. The tuberculin test is justly falling into disuse. To imagine that the diagnosis of syphilis begins and ends with the Wassermann test is irrational.

There are a few doctors yet who hold to the obsolete method of secrecy in diagnosis and treatment. It is now held that the patient is entitled to know what his trouble is and may justly demand the treatment. An enlightened laity has made it imperative that physicians no longer maintain that secretive, mysterious demeanor that formerly was so characteristic of the profession. It is now demanded that everything be open and above board, and secrecy is believed to be a cloak to cover faulty diagnosis and irrational treatment.

And thus it may be concluded that medical

science is not yet an exact science. There is still a great work before us in all branches of medicine. The signs of the times are propitious. Certainly more harmony is just around the corner. We look with confidence to our leaders, our textbook writers, our teachers and our schools to help us cut the Gordian knot of our fads and fallacies and deliver us from our confusion. A popular formulary gives 45 different remedies for gonorrhea and 56 for tonsillitis. It appears that a great national, or perhaps international council could formulate for the general practitioner a standardized treatment for each disease. I commend this task to some great leader who wishes to make himself an immortal in his service to mankind. The Council on Pharmacy and Chemistry of the American Medical Association has done a great work for us along this line, and we should be appreciative enough of their labors to confine our prescriptions to council passed remedies.

Great things have been accomplished in medicine in the last half century. The span of life has been increased from 35 to 58 years. Our people owe the medical profession a debt of gratitude that they seem little inclined to pay. In the past fifty years, no science has made more progress than has medicine. Wonderful discoveries have been made in diagnosis and treatment. Many times our fads and fallacies have been steppingstones to something better. The history of medicine is a story of outlived fashions. An eminent Irish teacher has said; "hard and conscientious work, accurate observation, sound reasoning, a mind free from obsessions and superstitions, a firm belief in the possibilities of medicine as an art and as a science; these are the things that raised medicine to its present greatness; these are the things that will carry it onward, always."

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THE ANNUAL MEETING

It has been customary in the past to address the members of the Louisiana State Medical Society in the issue of the Journal which appears in the same month as takes place the annual meeting. This year the custom will be done away with, at least in part, because the annual meeting will take place before many of the members of the organization will receive the May copy of the Journal. Uncontrollable circumstances

have fixed the date for the meeting of the Society on May 2, at a later time than the meeting has been held for some years.

Again we want to recall to the minds of the readers the importance of this annual convocation of the doctors of Louisiana who are members of the State Society. Its value cannot be stressed too strongly. The scientific and business affairs which are presented to members of the Society at this time are of extreme importance both from the point of view of education and from the point of view as well of the proper conduct of the Society.

As usual an excellent program has been provided to elucidate some of the medical problems of the day. Not only will there be speakers from throughout the State but there have been invited three outstanding clinicians to address three important sections. Dr. Ray M. Balyeat of Oklahoma City, one of the really big men in medicine in the midwest, is down for a paper before the Section on Medicine. From St. Louis comes Dr. Barrett Brown who is scheduled to give the Section on Surgery a discourse on a very important subject in these days of many accidents, namely injuries of the face. The Section on Obstetrics and Gynecology is fortunate in having as their out-of-town speaker Dr. Virgil Counsellor of the Mayo Clinic, whose reputation as a scientist is well known to obstetricians and gynecologists throughout the country.

It is earnestly hoped that the members of the Society will make a special effort this year to attend the scientific sessions. Last year at Monroe our hosts were so delightfully enthusiastic in arranging for social activities that the scientific sessions at times were brutally neglected. Some of the essayists who had the last places on the program spoke to the Chairman and the Secretary and maybe one or two members. This is extremely hard on the man who has taken the time and trouble to prepare a paper. The courtesy of attendance should be paid him as reward of his efforts in getting together what he has to say.

A series of social events has been prepared

by the New Orleans Committee which will add interest and pleasure to the meeting. An earnest attempt has been made not to conflict with the scientific sessions, but, at all other times, the pleasures and attractions of New Orleans and the hospitality of the local doctors will fill the remainder of the day completely.

The ladies of the Woman's Auxiliary of the Orleans Parish and of the State Society have done more than their share to prepare a series of entertainments for the visiting ladies at times when their husbands are busy with the scientific and business affairs of the organization.

Come to New Orleans for some good talks! Come to New Orleans for a good time as well!

THE ALTRUISM OF THE PHYSICIAN

It is almost a byword among the laity that the physician is altruistic. Every one knows that he is called upon to give time and service to a tremendous number of patients from whom he can never hope to receive any financial remuneration, although gratitude and appreciation sometimes are sufficiently marked to compensate for the services rendered. The average person thinks only of the doctor in his conduct with the individual patient and what he does for a single person. The world forgets often that it is the doctor who is advocating at all times large scale health measures which will rob him of a goodly number of his patients. It was not so many decades ago that the medical wards of the large metropolitan hospitals were divided equally between the typhoid fever cases and patients presenting other types of medical disease. A very considerable part of the physician's practice was spent in taking care of typhoid fever. Through the efforts of the doctor this disease has been rendered almost non-existent or at least existent to only a very limited degree. Major hygienic measures have made this possible; the minor measures are also important, such as vaccination of a susceptible individual against typhoid fever, which is being practiced only fairly exten-

sively. A recent epidemic of typhoid fever in one of the parishes nearby New Orleans indicates definitely that, despite the utmost vigilance of the health authorities, typhoid fever may break out in any community. The thinking physician who is aware of this possibility advises his clientèle to have preventive inoculations against this disease. It seems very important at this time that this should be done because typhoid fever will respect neither race, creed nor color. It may slip insidiously into the household in spite of activities of the State Board of Health. Every physician should acquaint his clientèle with the importance of individual prophylaxis of this disease. Typhoid fever can be prevented safely, efficiently and without physical disturbance of any moment.

CHILD HEALTH DAY

On May first there will be observed in Louisiana, Child Health Day as part of the nation-wide effort to "speed children on the road to health." Dr. L. A. Masterson, Director of the Maternal-Child Health Division of the Louisiana State Board of Health, is the state May Day Chairman. It is hoped that there will be an extensive observation of this particular day. It is planned to have school programs in cooperation with the State Department of Education which will emphasize the activities which contribute to the promotion of year-round child health services. At this time communities should plan for the improvement and extension of child health services. Any local community in the state may obtain suggestions and material for May Day observance through the Bureau of Parish Health Administration. The Chairman of the State May Day, has suggested that the various forms of celebration of May Day, such as plays, games and festivals, be utilized to stimulate interest in health needs and accomplishments.

LIBRARY SERVICE

A circular letter has been sent out by the librarian of the Orleans Parish Medical So-

ciety to the secretaries of constituent parish and district medical societies, having to do with the establishment of a medical library service division of the Orleans Parish Medical Society Library. It is sincerely to be hoped that this matter will engage the serious intention of parish societies. In New Orleans is located the largest medical library south of Washington. It is a library which receives practically every important current medical publication, whether in the English, French or German language. There are over 53,000 bound volumes which include not only older reference books but practically all the new books that have come out in the last few years. There is an extremely large reprint division.

This is a very real step in advance which is being offered to the practitioners of Louisiana. The service will be prompt and, you may be assured, efficient. One of the objections to the package library service which is available through the American Medical Association or through the Army Medical Library is the necessary delay in receiving books, reprints or other sources of bibliographic information. This would be obviated with the formation of a library service through the Orleans Parish Medical Society.

The plan as advanced is only tentative. It might be that, at the meeting to discuss the formation of this plan, possible subscribers and presumptive parish unit members would like to change some of the suggestions formulated in the letter of Dr. D. C. Browne.

CANCER CONTROL

The Committee on Cancer of the State Medical Society, under the energetic leadership of Dr. John A. Lanford, is to be commended on the splendid work that they have done to bring before the medical profession the importance of cancer, particularly the extreme necessity of making an early diagnosis. The Committee has more or less had to work alone. Now it is to be aided by the Women's Field Army of the American Society for the Control of Cancer in promoting and fostering cancer education and particularly early physical examination. It is earnestly hoped that the Woman's Auxiliary of the State Medical Society will throw the weight of their prestige and their ability to contact women throughout the state into this effort. The Women's Field Army so far, where it has been organized, has done splendid work. It must be remembered that the physicians of the state must cooperate with these women. In other states it has been reported to the state commanders that the physicians to whom they have gone for complete examination have not palpated the breasts nor have any inspected or palpated the uterus. These women are sincere in their effort to discover early cancer and if they go to the physician he should look with sympathy on their request and should make such complete examinations.

The Women's Field Army of the United States now numbers thousands; it should be hundreds of thousands. If the Woman's Auxiliary gets behind this movement the number in the State of Louisiana should be in the thousands, as well.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

J. T. NIX CLINIC NEW ORLEANS

At the meeting held in March, Doctor Monte Meyer presented the following paper:

TRAUMATIC RETRO-ORBITAL HEMORRHAGE AND CELLULITIS

The following is an unusual accident with serious complications, sequelae and recovery, and was taken from the file of the J. T. Nix Clinic.

Admission Diagnosis: Retro-orbital hemorrhage

and cellulitis (traumatic); meningitis, unknown type; complication.

Admission History: C. C., aged 12 years, was admitted to Hotel Dieu on January 14, 1937 at 8:30 p. m. While skating on roller skates, attempted to throw a sharpened steel or iron rod (playing mumble peg) to make it stick up in the ground, he lost his balance and the sharpened end entered the upper lid near the outer canthus. Patient was given first aid by a physician who anti-

septicized the wound and told the parents it was only a trivial accident. His appetite has always been good; no constipation. He plays and studies well. He had the usual childhood diseases; no previous operations.

Physical Examination: The eyelids, especially the upper, markedly swollen and ecchymotic. Small laceration of right upper lid in outer third (point of entrance of iron rod). The lids are separated with difficulty. The eyelid is slightly proptosed. Conjunctiva in external half red and edematous. Motility of eye impaired and eyeball



Fig. 1. Shows site of wound and marked proptosis. can not be moved beyond midline when attempt is made to look to the right. The vision is undisturbed (apparently normal for near and distance). Cornea clear, lens clear, vitreous clear. Fundus shows no hemorrhages or exudates or rupture. Optic nerve head clear.

The neck was rigid and attempts to flex the chin on the chest were excruciating. The remainder of physical examination was negative.

An immediate neurological consultation was requested and Dr. Lucy Hill made this report: Severe headache, greatest intensity behind right eyeball, mild confusional symptoms, rigidity of neck, mild opisthoionos, mildly positive Kernig. Temperature, 103 degrees. Diagnosis: Meningitis following injury. Spinal tap advised with manometric reading, smear and culture.

Operation: Under cyclopropane, exploration of wound in upper lid made to extend into retro-orbital tissue. Blood clots were removed by suction, and a rubber tube drain placed in retro-orbital space and sutured with silkworm in eyelid. Dressing applied. This was done to relieve tension and promote drainage.

Dr. Nix then made a spinal tap. Manometric pressure 40—fluid cloudy under pressure; 20 c.c. fluid removed and 10 c.c. anti-meningococcus serum introduced through spinal needle. (At this time we thought it might be due to the meningococcus). Smears and culture were sent to the laboratory. Fifteen hundred units tetanus antitoxin given upon admission.

Laboratory Findings: Spinal Fluid.

			White	reduced
	Polymorph.	Lympho.	Cells	Pressure to
1/15/37	98	2	12,750	70 20
1/19/37	81	19	2,000	50 15
1/20/37	91	9	6,000	70 18
1/21/37	80	20	2,250	70 20
1/22/37	79	19	2,500	62 14
1/23/37	74	26	1,445	54 18
1/24/37	79	21	1,300	58 14
1/25/37	60	40	221	32 15
1/27/37	55	45	157	42 16
1/29/37	80	20	210	40 14
1/31/37	65	35	148	38 10
2/ 1/37	88	12	8,500	36 8
2/ 3/37	94	6	3,250	42 14
2/ 4/37	92	8	1,275	54 15

1/15/37 Spinal Fluid: Smear: Many pus cells, few red blood cells, occasional staphylococcus and pneumococcus.

Culture: Few pneumococci after 36 hours.

1/19/37 Smear: Pus cells and very few partially lysed pneumococci.

1/20/37 Pus cells, no organisms.

1/29/37 Many red blood cells.

1/31/37 Four plus occult blood.

2/ 1/37 Smear: Many pus cells, few pneumococci. Culture: Pneumococci Type IV.

1/21/37 Exudate from eye: Smear: Pus, blood, many staphylococci and saprophytes, few colon type organisms. Occasional pneumococcus.

Culture: Staphylococci, saprophytes, colon type bacilli and few pneumococci type IV.

Treatment: There was ordered for the patient liquids freely, purgative enema and nutritive enema, black coffee, and glucose. He was given 1500 units of tetanus antitoxin and 10 c.c. anti-meningococcal serum intraspinally. Chloral hydrate, 5 grains, and sodium bromide, 20 grains, were ordered by rectum every three hours; and a grain of sodium luminal, as needed, as well as morphine and codeine. A 10 per cent argyrol eye drip was given twice a day; antipneumococcal serum was administered in doses of 20,000 units on January 16, 17, and 18; sedatives as needed. On February 1, he was given ephedrine with merthiolate alternating with aspirin and phenacetin. Digalen was begun on January 22, in doses of 20

minims hypodermically for three doses. This was repeated on the twenty-third. On February 17, argyrol was discontinued, and boric acid and camphor water was substituted. Ten c.c. of one half of one per cent mercurochrome were given intravenously daily from January 21 through 25, and repeated on January 27, 29, 31, and February 1-4, 9, 12, 15, 18, 21.

Progress Notes: January 14. The above therapeutic measures were instituted. Chloral hydrate and sodium bromide were continued throughout the length of the disease.

January 15. Spinal tap; pressure reduced from 70 mm. to 20 mm. Headaches more intense; neck more rigid, delirious; involuntary defecation and micturition. Pulse volume very good.

January 16. Pressure was reduced from 30 to 15 mm. after spinal tap; fluid still cloudy; 20,000 units antipneumococcic serum advised intraspinally. Condition practically same although nourishment by mouth improved.

January 17. Spinal tap, 54 mm. reduced to 20 mm.; 20,000 units antipneumococci serum intraspinally. Temp. 101°. Pulse, 94. Resp. 22. More comfortable. Warm boracic acid compresses to eye.

January 19. Spinal tap; 50 mm. reduced to 15 mm.; 20,000 units antipneumococcic serum intraspinally. Patient still restless.

January 20. Spinal fluid hazy; 20 mm. to 18 mm. Right eyelid still swollen. Rubber tube replaced. Vision still normal.

January 21. Spinal tap; 70 mm. reduced to 20 mm.; 10 c.c. $\frac{1}{2}$ of 1 per cent mercurochrome given intravenously.

January 22. Spinal tap; 66 mm. reduced to 14 mm.; fluid much clearer; 10 c.c. mercurochrome $\frac{1}{2}$ of 1 per cent intravenously. Chill lasting twenty minutes after mercurochrome. Pulse very weak and rapid. Hives from serum. Thirty c.c. spinal fluid removed.

January 23. Pressure 54 mm. reduced to 18 mm. Much clearer. Ten c.c. of $\frac{1}{2}$ of 1 per cent mercurochrome intravenously. Eyelids improved. No growth on culture.

January 24. Patient quiet. Spinal tap; 50 mm. to 14 mm.; 40 c.c. spinal fluid removed; 10 c.c. mercurochrome intravenously.

January 25. Spinal tap; 32 mm. reduced to 15 mm.; 30 c.c. fluid removed; 10 c.c. mercurochrome advised intravenously. Chill following mercurochrome.

January 27. Spinal tap; 42 mm. to 16 mm. Patient now able to move eye externally. Neck less rigid. Temp. 100°. Pulse volume improved.

January 29. Spinal tap; 40 mm. reduced to 14 mm. Spinal fluid almost clear. Ten c.c. mercurochrome given intravenously.

January 31. Spinal tap 28 mm. reduced to 12 mm. Ten c.c. mercurochrome intravenously.

February 1. Spinal fluid cloudy again; 36 mm. reduced to 8 mm. Patient again complains of very severe headache, chills and nausea. Roentgen ray of orbit revealed no foreign body. Ten c.c. mercurochrome given intravenously.

February 3. Patient's pulse very weak and rapid. Cyanosis. Digalen ordered. Spinal fluid 32 mm. reduced to 14 mm.

February 4. Improved. Spinal fluid 54 mm. reduced to 15 mm.

No further spinal taps made as condition improved steadily. Discharged on February 25. Eyelids normal. Motility eye is normal. General condition good. Advised to rest at home for a month.

Summary: Sudden onset of a meningitis less than twenty hours after injury. The iron rod penetrated the retro-orbital tissues and probably ruptured the ethmoid region downwards entering the meninges (no evidence of point of rupture seen in skiograph). The culture twice revealed pneumococci although they were few in number.

Twenty thousand units antipneumococcic serum administered intraspinally on January 16, 17, and 18.

Nineteen injections of 10 c.c. of $\frac{1}{2}$ of 1 per cent mercurochrome given intravenously.

The spinal fluid showed 12,750 cells at the first tap and gradually decreased to 148 on January 31. Then on February 1 the headache became intensified and cell count went up to 8,500.

Although the cell count was 1,275 with a reading of 54 mm. on February 4, the clinical symptoms improved so rapidly no more spinal taps were made.

Conclusion: This case was practically considered hopeless at its onset, yet under this intensive treatment complete recovery ensued. Very few cases of pneumococcic meningitis survive; hence I believe it worth while reporting.

May I extend my thanks to Dr. Nix for the courtesy of publication and my thanks to Drs. Hill and Gorman who worked so diligently with me.

Note: Patient seen one year after discharge and he is still fully recovered. Has increased twenty pounds in weight and is attending school.

FACULTY CLUB

LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE

The January meeting of the Faculty Club of the Louisiana State University School of Medicine was held Friday, January 14, 1938 in the Medical Center Science Building, with the President, Dr. P. J. Carter, presiding.

Dr. S. A. Romano, of the Department of Surgery, presented the following subject:

THE LIMITATIONS AND DANGERS OF MAMMOGRAPHY BY CONTRAST MEDIA

Reports in the literature of the value of mammography and of the harmlessness of stabilized thorium dioxide were the incentive for its use in a series of 25 breast cases of various types, 23 of which were surgical. In 13 of the latter group the mammographic diagnosis agreed with the clinical diagnosis and was later confirmed in the laboratory. In other cases, however the diagnosis was either not clear or was actually incorrect. The most serious of these errors occurred in cases of malignancy which was evident clinically but which was not revealed by roentgen ray examination after injection of an opaque agent. In four of the 25 clinical cases, the injection of lipiodol or of thoro-trast (stabilized thorium dioxide) gave rise to foreign body reactions, three of which were very severe; in two of these three cases, mastectomy would have been necessary because of the reaction if it had not already been planned for other conditions. Only three similar cases, all by different authors, are reported in the literature. An experimental study resulted in more than 50 per cent of foreign body reactions, all of which were similar to the reactions noted in clinical cases. Of the various agents used experimentally, all were satisfactory from the radiologic standpoint, but were sometimes followed by reactions. Lavage of the breast after injection did not prevent the reaction in all cases nor did the physiologic lavage brought about by the act of nursing eliminate the foreign substances from the ducts at the end of a month. It is not felt that the method, as it is now employed, contributes diagnostic aid of sufficient value to warrant the risk of the serious reactions which may follow its use. Until an agent is discovered which is non-irritating to the breast tissues and which is at the same time satisfactory from the radiologic aspect, we do not advise the use of mammography by means of contrast media. (With slides).

THE USE OF MICE FOR TESTING TOXICITY OF RABBIT SERUM INTENDED FOR THERAPEUTIC PURPOSES

Drs. K. L. Burdon and E. L. Burns presented this paper which will be published elsewhere.

VENTRICULAR TACHYCARDIA

This paper was presented by Dr. J. L. Gouaux and will be published elsewhere in full.

HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Preventive Medicine, Dr. W. H. Perkins, presiding, on Health Studies in Family Aggregates.

Some Social Factors in Family Health (Julia Mae Magruder, Director of Social Service): There are a number of adverse social factors associated

with problems of ill health. Briefly, these are inadequate physical protection, inadequate economic protection, faulty personal habits, dissatisfactions connected with family or other group relationships and dissatisfactions connected with restricted outlets. The first and basic requirement for health is adequate physical protection. In order to bring out the extent to which the families under consideration tonight have had adequate physical protection, the minimum standard for food and housing will be outlined. These standards are generally accepted as the lowest at which the health and well being of families may be maintained.

Good nutrition requires that the following minimum be included in the dietary: From one-third to one quart of milk daily for each individual according to age; one-eighth to one-fourth pound of meat clear of bone, gristle and fat for each individual three or four times a week, other high-protein foods to be substituted on days when meat is not used; in addition to potatoes, another vegetable at least once, preferably twice daily; fruit, part dried, at least once, preferably twice daily; sugar, four ounces to one pound per person per week according to age; in addition, there should be enough cereal products, legumes and fats to satisfy the normal appetite. Additions must be made in case of special diets. There is little margin for waste or personal preferences.

Housing must provide sufficient space for proper ventilation of the sleeping rooms and privacy. A room for the parents and separate rooms for children of each sex is necessary. The living room may serve also for sleeping or may be combined with the kitchen. A bathroom with toilet for exclusive use of the family is particularly necessary in this climate. If the sleeping rooms are large enough, more than two children of the same sex may sleep in one room although this is not desirable. The house should be off the ground, rat proofed, each room having at least one window opening into space sufficiently free to permit sunshine for a few hours a day. The home should be in a neighborhood free from deteriorating influences, with play space free from danger provided on the lot or nearby. It should be kept in mind that even when there is sufficient number of rooms for the total number of people in the home, there is danger of overcrowded sleeping conditions when the house is shared by two or more families.

What is the cost of this minimum standard of living? We may use for illustration a family of five, the father at moderate muscular work, the mother at moderate muscular work, and three children, ages thirteen, ten and seven years. The cost of food for this family for one year would be approximately \$438.60. Add to this the other necessary expenses for clothing, fuel and light, household supplies, ice, carfare, health (for ex-

ample, toothpaste, laxatives and antiseptics), education, insurance and recreation and the total budget for the year, exclusive of rent, is \$882.54. The food expense comes to approximately half of this amount. In other words, we may expect the expenses of a family to amount to more than twice the amount of the minimum food budget when rent is included.

In the six families that we are considering tonight, we see a number of adverse factors. In the entire group, for a period of years the housing has been inadequate in some respects, either because of overcrowding, lack of sunlight and ventilation or lack of sanitary conveniences. In five, the food supply has been inadequate; often the total income has been less than the amount required for food alone. Three families are known to have had inadequate clothing and it seems probable that one of the others may have suffered from this lack also. Added to these physical deprivations, we find habits unfavorable to maintaining health in four, habits interfering with the carrying out of medical recommendations in one, inadequacy of one or both parents in three and family friction in three. Under these conditions, we can hardly expect to see the children growing up in health. Actual economic insufficiency in itself, while it usually takes its toll in one way or another, often results in greater physical deprivation and ill health in some families than in others.

The answer seems to be management. The efficiency of management is dependent on a number of things, not the least of which are personal adequacy of the parents, family compatibility and the standard of living to which the family is accustomed. The importance of family relationships cannot be stressed too strongly here. Where there is friction and dissatisfaction in the family life, the efficiency of all of the members of the family probably will be dissipated, resulting in poor planning, poor cooperation between members of the family and faulty habits.

Dissemination of Parasites in Families (Dr. Joseph D'Antoni, Department of Parasitology): Dissemination in family groups of parasitic fecal-borne infections may be said to be dependent on two main factors: (1) The characteristic behavior of the offending organism, and (2) the personal hygiene of the family. In general, it might be said that the incidence of parasitic infections in a group is dependent on the one hand upon the rapidity with which these organisms can complete the phase of their respective life cycles or their resistance to unfavorable conditions outside the human body, and, on the other hand, upon the conditions of personal and group hygiene favoring exposure to infection. With these principles in mind, parasitic organisms may be grouped as follows:

I. Those in which infection may take place

immediately after the organisms have been passed in the feces. I shall refer only to organisms important in this area.

1. *Endamoeba histolytica*. Cysts may remain viable in the passed stool over a period exceeding twelve days. In water, cysts are viable for nine to thirty days. As yet, in man there has been no evidence of infection occurring when trophozoites have been ingested. However, experimentally, this has been demonstrated in dogs and may possibly occur in man. The cysts may be ingested in contaminated water, and with green vegetables; or even the hands or the finger nails may harbor cysts, thereby making food handlers responsible for transmission. The cyst wall is digested in the intestinal tract and the parasite, on reaching the terminal ileum or large bowel, invades the gut wall.

In summary, the methods of transmission of *Endamoeba histolytica* are: (A) By direct ingestion of cysts from contaminated hands; (B) by contaminated food or drink: (1) Handling of food by infected persons; in the home this is the most frequent source of contamination; (2) a polluted water supply; (3) use of night-soil as a fertilizer for vegetable gardens.

2. *Enterobius* (pinworm, seatworm, oxyuris). Eggs discharged in the feces require no incubation period. Infection takes place manually by direct introduction of eggs into the mouth. Upon reaching the duodenum the eggs hatch. They pass down the lower jejunum or ileum, molt twice in transit and become attached to the mucosa of the lower bowel. The complete life cycle from the time of ingestion to adult worm requires about two months.

Methods of transmission of *Enterobius* are primarily a matter of personal hygiene: (A) by fingers contaminated from scratching the perianal or perineal region or from soiled bed linens; (B) by inhalation of eggs which have gotten into air currents from soiled, personal and bed clothing; (C) from toilet seats harboring the eggs.

3. *Hymenolepis nana* (dwarf tapeworm). Eggs discharged in the feces require no incubation period, the optimum stage of viability occurring at this time. Infection occurs almost without exception by ingestion of eggs from soiled linen, toilet seats, or direct from anus to mouth. In ingestion the eggs hatch in the stomach or small intestine, the free onchospheres penetrate into the villi of the upper part of the small intestine and metamorphose into cercocysts which migrate out into the lumen of the bowel and attach themselves to villi farther down the intestinal tract.

The methods of transmission of *Hymenolepis nana* are the same as enterobius.

II. The second group of worms require a period of embryonation outside of the body before becoming

ing infective for man. The members of this group are:

1. *Ascaris*. Fertile eggs are passed in the stool. A moist shady habitat favors rapid development of the embryos in the eggs into motile first stage larvae. This requires at least nine to thirteen days. An additional week is required for development into the second-stage larvae before the eggs are infective for man. The minimum period of time required for these two stages is sixteen to twenty days. Eggs may remain viable in the soil for a year or more. These embryonated eggs are swallowed and in the duodenum the shells are digested. The worms penetrate the gut wall and enter the mesenteric veins and through the venous circulation are carried to the lungs, or perhaps more frequently are carried in the mesenteric lymphatics to the right heart, thence to the lungs. In the lungs molting occurs after the tenth day. Here the worms migrate into the air sacs, are carried over the epiglottis and are then swallowed. The adult worms live free in the small bowel. The time from exposure to the first oviposition of the female is sixty to seventy-five days.

Ascariasis is primarily a disease of small children because of lack of personal hygiene. The methods of transmission of *Ascaris* are: (A) By direct seeding of the soil immediately about the house, or even in the cracks in the floor, by promiscuous defecation of infected children; (B) by the use of night-soil as a fertilizer; (C) by air-borne infection.

2. *Trichocephalus*. Eggs are discharged in the feces and require twenty-eight days for embryonation in the soil; embryonated ova have been kept viable in water for a period of five years. Humans are infected by swallowing embryonated eggs. The shells are digested in the small intestine and the emerging larvae migrate to the region of the cecum, or appendix, become attached and grow into adult worms in one month.

Methods of transmission of *Trichocephalus* are the same as *Ascaris*.

III. Those parasitic organisms that enter through the human skin.

1. *Hookworm*. Ova are deposited in a moist shady warm place where decaying vegetation covers a sandy loam. They hatch in twenty-four to forty-eight hours. The emerging larvae feed on the organic debris and in the course of nine to thirteen days pass through three larval stages. At the end of this period these filariform larvae are infective for man. If the old cuticula of the filariform, that is, infective-stage, larvae is not shed, this larva may remain viable up to fifteen weeks. The infective larvae enter the skin and are carried by the venous circulation, migrate into the air sacs and are then carried over the epiglottis into the stomach. After five weeks females begin

to oviposit. Seventy per cent of all worms may be expected to die within one year.

Methods of transmission of hookworm are: (A) By improperly shod feet; (B) by improper disposal of feces; (C) by the use of night-soil as a fertilizer.

IV. Those organisms requiring an intermediate host fall in this group.

1. *Beef and pork tapeworms*. Eggs are discharged in feces and deposited in the soil. They may remain viable for many weeks. On ingestion by hogs or cattle the shells are disintegrated within twenty-four to seventy-two hours and the emerging oncospheres penetrate the intestinal walls and are filtered out in the striated muscles, where in the course of sixty to seventy days metamorphosis into the cysticercus takes place. Uncooked infected pork or beef is ingested by man and within five to twelve weeks an adult worm develops.

Methods of transmission of tapeworms are: (A) By eating raw pork or beef; (B) through improper disposal of feces.

From the foregoing life cycles, one can readily see that personal hygiene is paramount in the spread and prevention of helminthic and protozoal fecal-borne infections. Where personal hygiene is poor, especially in children, or more so in groups of children, the incidence of these diseases must be higher.

The Health of Large Families (Dr. W. H. Perkins, Department of Preventive Medicine): The contributions of Dr. D'Antoni and Mrs. Magruder form important ground work for the study of the health of families. The distribution of parasites through a family is of more importance than the epidemiology of the specific infection; it is a reflection of the general sanitary status of the home and the hygienic habits of its members.

Any discussion of family health must interest itself greatly in the economic status. People must be fed, sheltered and clothed and it is assumed also that they should be in a position to afford pleasures and relaxation in keeping at least to a degree with their desires.

Many studies have been made on the incidence of particular diseases in families, of outstanding importance among them being tuberculosis and rheumatic fever. It is not our purpose, however, to follow any particular diseases through the family groups studied but to present the whole picture of the families which may have the diseases. In this way, the family is looked upon as a unit of society, smaller than the society itself, but larger than the individuals who make it up.

Our method has been to prepare charts of each family studied on which are shown longitudinal bars representing the life lines of all members of the household. The bars extend across the divisions in years thus giving a graphic picture of the relative points in time at which any individual

joined or left the group. Through the length of each life line are indicated all factors of medical importance to the individual so represented. By this, chronologic correlation is obtained in the time incidence of such happenings as acute contagious disease among different members of the group, deprivation of the wage-earner, births and the appearance of chronic infections such as tuberculosis.

It is not my purpose to analyze all of the details presented by these families. There are a few major points in the study which I wish to present.

In the first place, a broad picture of the families represented reveals wide discrepancies in the anticipated "healthiness" of families drawn from the same economic level. Although they are all of a low economic class and our records show that all obtain, or can obtain, approximately the same amount of food and degree of shelter, they do not do so, and moreover one family will give a general appearance of healthiness while in another the children are undernourished, dirty, and generally in poor physical condition. This seems to have no bearing on any chronic infection in the families. In one family in which the mother is an open case of tuberculosis and has long been in contact with her children, the children are in far better state of health and nutrition than in all the other families. This same family lives in physical surroundings ideal for the spread of food and finger contaminating parasites and yet they are entirely free of them.

In a second family with open tuberculosis contact the positive and negative tuberculin reactors are about evenly distributed. The time element of exposure of these children cannot account for the difference.

Psychic factors are easily studied by this method. There is almost a visible contagion in some of the families where a serious maladjustment has appeared in one member and spread to others. In another family with marked parental discord the children are quiet, well behaved, and well tempered.

We cannot and do not yet attempt to explain these apparent discrepancies. Our study is young and necessarily inaccurate because most of the life lines have had to be created on hearsay evidence. The Department of Preventive Medicine is, however, well launched in a systematic chronologic study of family groups now in attendance and it is planned to keep it up over a long period of time. Out of it may eventually come some understanding of the things that are now so difficult to understand in the differences in family aggregates.

NEW ORLEANS DISPENSARY FOR WOMEN AND CHILDREN

At the scientific meeting of February 18, 1938, Dr. Warren H. Hebert presented the following paper:

CERTAIN ASPECTS OF LYMPHOPATHIA VENEREUM

If we accept syphilis, gonorrhea, chancroid (ulcus molle), granuloma inguinale and Vincent's infection as the first five genito-infectious diseases, then lymphogranuloma inguinale, or better called lymphopathia venereum, becomes the sixth. Hellerstrom's monograph published in 1929 offers an excellent historical survey. Stannus has included some nine hundred references in his book which serves as an excellent bibliographic review.

It is interesting to note the many different names under which this disease entity has masqueraded. While this condition must have existed for centuries it was not clearly described as an infectious disease until the latter half of the nineteenth century when Chassaignac, Nelton, Trousseau, and Scheube, each separately reported a type of inguinal bubo which followed the invasion of the disease into the lymphatic system. Following this, Klotz, Galloway, and Gooding contributed cases to the literature. It was not until 1913, that Nicholas, Durand, and Favre interpreted the process as a venereal disease with primary and secondary manifestations. Later observations by their pupil, Phylactos, established these facts and estimated the incubation period of the disease from 10 to 25 days. The importance of the work of this group is attested by the fact that in France the disease is still known as "le maladie de Nicholas et Favre." They suggested the term lymphogranuloma inguinale. In 1932 Wolf and Sulzberger suggested the term lymphopathia venereum.

Until recently examination of the material from the inguinal buboes by dark field examination, animal inoculation and bacteriologic examinations were without significant findings. In 1931, Levaditi, Ravant, Lepine, and Schoen and, independently, Hellerstrom and Wassen determined that the infecting agent of the disease is a filtrable virus. Introduction of the specific skin test of Frei in 1925 has stimulated further study of the disease. With the aid of this test the etiologic relationship between lymphopathia venereum and climatic bubo (Findlay), inflammatory stricture of the rectum, non-specific urethritis of Waelsch can be demonstrated. Frei and Koppel in 1928 discovered that chronic inflammatory rectal disease with stricture formation and, also elephantiasis and ulceration of the vulva were late results of lymphopathia venereum. Since 1927 excellent descriptions of the clinical course of this disease have been published.

We see, therefore, that this disease is one of great antiquity, endemic and distributed over the

entire world. It is far more prevalent than is generally realized and it occurs more frequently in the colored race than in the white. It is considered a venereal disease caused by filtrable virus. It is transmitted by contact and it primarily involves the lymphatic system. It is interesting that the manifestations of this disease are different according to the sex as well as the race. In the white race there is stricture formation, hypertrophies, pseudo or real elephantiasis, but not so pronounced as in the negro race.

In the male soon after the genital lesion appears there is an enlargement of the regional inguinal lymph nodes. The primary lesion is extremely evanescent and rarely is attention drawn to this lesion. The period of incubation before the appearance of the primary lesion varies from 3 to 14 days. In most cases it is vesicular but it may be nodular or ulcerative. It is generally agreed that the period of incubation before appearance of the primary lesion is from 3 to 7 days. Prehn has described 40 cases in which buboes have appeared before the appearance of the primary lesion. As a rule, three weeks to two months following the initial lesion the inguinal glands become involved. The adenitis is most often unilateral (70-80 per cent), being bilateral in approximately 20 to 30 per cent of the cases. First there is a simple discrete swelling which is usually painless. Later, induration occurs, there is swelling, the skin becomes discolored and adherent to the glands and the inguinal adenitis becomes fluctuant in about three weeks. Without surgical interference most of the glands will drain to the outside, forming multiple inguinal discharging sinuses. The period of incubation to develop a positive Frei reaction is about 2-3 weeks. As a rule, the Frei test becomes positive when the glands become involved.

In the female the initial lesion is rarely ever noted as it occurs on the cervix or walls of the vagina. The lymphatics that drain this area extend along the ntero-sacral ligaments, encircle the rectum and drain into the lymphatic chain in the rectal stalks. It is the lymphatic distribution that explains the wide degree of difference in the clinical manifestation of this disease in the two sexes. In the male 85 to 90 per cent develop an adenitis while approximately 10 to 15 per cent develop rectal stricture. In the female, 85 to 90 per cent develop the so-called genito-anorectal syndrome while an adenitis is rarely encountered. The lymphatics that drain from the prostatic area to the retro-rectal lymphatics probably explain the presence of rectal stricture in the male.

The course of the disease is an irregular one. At the onset, some individuals suffer with chills, fever and general malaise. Headache may be pronounced in some as evidence of meningeal irritation. Others suffer no complaints other than the

local discomfort associated with adenitis. We know little of the life expectancy of these patients as the Bureau of Vital Statistics makes no report on this disease. We do know that it is relatively rare to see an individual past the age of fifty who is suffering with the disease in its active phases.

Many manifestations of the disease are recognized, depending on the phase of activity at the period of examination. They may be classified as follows: (1) Inguinal adenitis; (2) discharging inguinal sinuses; (3) pre-stricture lymphogranulomatous proctitis; (4) stricture of the rectum with or without complications; (5) the cockscomb and anal bouquet; (6) perianal water pot (sinuses and fistulas); (7) elephantiasis of the vulva (esthiomene or genito-anorectal syndrome); (8) stenosis of the rectum associated with narrowing in other regions of the colon.

Unfortunately there is no specific treatment for lymphopathia venereum and consequently various types of therapy have been suggested. It would be impossible to mention all of the various forms of therapy suggested. The weekly intradermal injection of 0.1 c.c. of the antigen over varying periods of time seems to offer the most satisfactory results. Faudin, which is an antimony preparation, has been used with good results by some clinicians. Foreign protein therapy, Lugol's solution and radiotherapy have been used with questionable results.

It is still a disputed question the part surgery will play in the treatment of this condition. There are those who believe that it is curative if adenectomy is performed in the early stages. After supuration occurs surgery is the method par excellence. Simple incision usually results in a long standing sinus. Complete and radical adenectomy is preferred to partial excision. The elephantiasis and chronic ulceration of the vulva have not responded to methods other than surgery. Excision, daily cleansing and applications of 5 per cent gentian violet has offered encouraging results. The edematous perianal hypertrophies which are often mistaken for hemorrhoidal tags should be excised. If left alone they may become infected and ulcerated from the irritating rectal discharges. Some heal rather rapidly, whereas many become indolent ulcerations and heal slowly.

The handling of sinuses and fistulas will largely depend on the extent of the stricture which is present. Fistulectomy in the presence of a stricture may lead to varying degrees of incontinence. The constant bathing of the wound from the rectal discharges is a factor in the delayed healing of these wounds. Abscess cavities should at least be incised to permit satisfactory drainage. Dilatation may benefit an occasional case in which stricture is present. It should be gently carried out and should never be instrumental. Numerous cases

show febrile reactions and several have died from fulminating infections that follow dilatation. An occasional case of stenosis seems to yield after dilatation therapy, but the majority do not present gratifying results. Should a diaphragm or short stricture remain as the result of an old healed process, this area may be resected. Dr. Conrad Collins has four such cases.

Colostomy is considered the most suitable method of handling these strictures of the rectum. As the majority of these patients are young females, careful consideration should be given before suggesting an abdominal anus. Following a colostomy the anal discomfort is diminished, the rectal discharge and bleeding are reduced to a minimal. Radical resection of the lower bowel has been performed in many instances and as yet there is insufficient data to determine its advisability. The mortality figures seem excessively high and the morbidity is great.

If surgery during the early phase of adenitis is curative then the urologist will have this burden to bear. According to Dr. Edgar Burns, in the later stage where deep inguinal nodes are involved, where edema of the groin, scrotum and leg exist, surgery has little to offer other than palliation. In the female the condition is rarely ever noted before varying degrees of narrowing of the rectum takes place. Excision of deep inguinal sinuses, hypertrophies of the vulva and anus, elephantiasis of the vulva, perianal fistula and sinuses, and plastic procedures as well as radical excision will always have their place, but it will consist of mere palliation.

FRENCH HOSPITAL

A regular meeting of the French Hospital Visiting Staff was called to order with Dr. J. Palermo presiding. The minutes of the previous meeting were read by Dr. R. E. Rougelot.

Prior to the paper of the evening, there was some discussion in conjunction with the deaths of the month, as to the few autopsies that were held by the hospital, and various members of the Staff. It was suggested that more effort be put into securing autopsies. Dr. P. A. Phillips stated that prejudice on the side of the Society accounted to some extent for the failure to obtain autopsies.

Dr. J. B. Gooch then presented a paper showing the advantage of ophthalmic examination rather than optometric examination, indicating that the latter does not give full correction for visual defects and that the ophthalmic examination, with its more thorough examination of the fundus through dilatation of the pupil, may reveal latent generalized or local disease, which the optometrist does not discover.

Dr. Gooch was thanked by Dr. Palermo, on behalf of the staff, for a very interesting program.

R. E. Rougelot, M. D., Sec.

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held in the Nurses' Lecture Room of Hotel Dieu on Monday, February 21, 1938. The meeting was called to order by the President, Dr. A. D. Mouledous.

The scientific program consisted of:

1. Clinicopathologic conference conducted by Dr. M. Couret who said the cases that are presented tonight are rather uncommon. They are two cases of hemolytic jaundice in the newborn. We have had the opportunity to study the clinical side of both cases and the autopsy findings of one. The blood pictures were similar and it would have been difficult to distinguish them from true pernicious anemias. The type of jaundice and clinical course and the autopsy findings with splenomegaly, a muddy color of all the organs, few scattered hemorrhages, marked evidences of blood destruction and phagocytosis of blood pigment and blood cell detritus in all the organs, with no characteristic bone marrow pathology, were the important points in the diagnosis of these cases. The jaundice was easily differentiated from the jaundice found so frequently in the newborn: it was of a greenish yellow color.

The cause of death in the fatal case, besides the pathology in other organs resulting from air hunger, was the direct result of blood detritus gathered into the veins forming thrombi which were swept into the vena cava and eventually into one of the branches of the pulmonary artery. The packing of this material in the smaller vessels was quite like that found in the vessels in comatose malaria.

2. A Newer Method of Treatment to Severe Compound Fractures by Massive Doses of Maggots, was presented by Dr. H. Theodore Simon. This talk was illustrated by a motion picture film which covered in detail the culture of the flies, sterilization of the eggs, and application of maggots to the compound wound.

Discussion was opened by Dr. C. E. Gorman with the presentation of a case of severe compound comminuted fracture of the right radius and ulna with great loss of bone substance and soft parts. Lantern slides of the patient and roentgen rays showing the loss of bone, and the method of extension in order to preserve the length of the arm during the application of maggot therapy were presented. Further lantern slides were shown of the patient today with a serviceable arm, straight, and with roentgen rays revealing an entire reproduction of bone substance.

A recess of one minute was ordered by the Chairman after which the meeting resolved into Executive Session. The meeting was then adjourned.

C. E. Gorman, M. D., Sec.

HIGHLAND SANITARIUM

The staff of the Highland Sanitarium held its

monthly meeting on March 17, 1938, in the Clinic Building, following dinner at 7:00 p. m.

The scientific program was as follows:

Dr. C. P. Rutledge gave a most interesting discussion regarding the Clinical Conference of Midwestern Radiologists that was held recently in Kansas City.

Some of the highlights mentioned by Dr. Rutledge were several papers on the benign and malignant lesions of the breast; a paper on the clinical analysis of low back pain; on undulant fever; acute intestinal obstruction; and on the ovarian influence in relation to cancer. Dr. Rutledge stated that one of the most interesting parts of the program was the demonstration of rare films demonstrating such lesions as a wire in the sphenoid bone, a hairpin in the kidney, and a bullet in the pericardial sac.

Dr. Duncan gave a discussion on bromide intoxication. He stated that the incidence of this condition in a large psychopathic hospital was approximately 7.7 per cent. Of this group, bromide intoxication was the sole cause of admittance of 1.7 per cent. Dr. Duncan stated that he believed the incidence to be even greater in outside neuropsychiatric practice. He also discussed the symptoms, prognosis and treatment. He presented two cases of simple bromide intoxication without delirium and ten cases with delirium.

The discussion was opened by Dr. Fleming, followed by Dr. Mason, Dr. Mathews, and closed by Dr. Duncan.

Paul W. Winder, M. D., Sec.

SHREVEPORT CHARITY HOSPITAL

The meeting was called to order on March 15, with Dr. J. P. Sanders presiding. Minutes of the previous meeting were read. Dr. D. H. Duncan objected to the incompleteness of minutes in a reported case of spinal cord tumor; additional information is to be added. Dr. Duncan moved that minutes of each program be presented to the editor for publication in the Louisiana State Medical organ, the doctor of the Service presenting the program to edit the minutes of his presentation.

SCIENTIFIC PROGRAM

Dr. P. W. Winder presented the following gynecologic cases:

1. Hemorrhage from graafian follicle: Dr. Winder discussed a differential diagnosis between hemorrhage from a graafian follicle cyst and acute appendicitis. The history of lower abdominal pain occurring suddenly in the mid-menstrual cycle suggest a diagnosis of hemorrhage from graafian follicle. Finding blood by needling of the posterior cul de sac together with the finding of a hyperplastic endometrium on curettage makes the diagnosis positive.

2. An acute abdominal condition: The patient

was admitted with severe pain in the lower abdomen, vaginal bleeding for two weeks prior to admittance, last normal menstrual period being four months previous to present illness. Examination revealed an orange-sized mass in the right lower quadrant, mass fixed and doughy in consistency, exquisitely tender. Pelvic examination revealed the cervix to be extremely soft with bluish tint.

Laboratory: White blood cells, 15,500; red blood cells 1,390,000; hemoglobin 36 per cent; urine negative; Kahn 4 plus.

Patient was given transfusion the day after she came in. On March 7, 1938, patient passed a complete decidua cast. Microscopic examination revealed only decidua with no chorionic tissue.

Clinical diagnosis: Abortion, complete, right inflammatory cyst, question of ectopic pregnancy. Needling of the cul de sac revealed no blood. Final diagnosis: Complete abortion, complete decidua cast, chronic bilateral pelvic inflammatory disease, anemia on luetic basis.

Dr. Mathews discussed the case with reference to the decidua cast passed as occurring in luetic patients. Case was discussed also by Dr. Sander-son and Dr. Cassity.

3. Hermaphroditism: The patient was admitted with the diagnosis of acute appendicitis. Patient appeared to be a colored male boy, age 15 years. Examination revealed large feminine breasts, masculine contour body, right scrotum with large grape-sized testicle; no left scrotum or left testicle, the penis measuring 1½ cm. in length with hypospadias; no vaginal opening. The patient was operated on and the appendix removed. Examination of the pelvic organs at that time revealed a uterus of approximately normal size, left ovary, left tube and round ligament.

Dr. Winder discussed what rehabilitary methods should be undertaken. Patient wishes to be male; desires a feminine companionship. To accomplish this Dr. Winder believes that the uterus and ovary should be surgically removed with conservation of the testicular tissue. Dr. Duncan urged that a more careful analysis should be made to ascertain whether his masculine or feminine drive was predominant.

Presentation of Unusual Cases in Hospital: Dr. VanDuyn presented the first case, being one of a patient with chills, fever and weakness of 2½ months duration; temperature 99.4, pulse 104; anemic mucous membrane; red blood cells 880,000, white blood cells 3,250, hemoglobin 26 per cent; hyperchromic macrocytic anemia, cause undetermined.

Discussed by Dr. Webb bringing to light possibility of lymphatic leukemia in an aleukemic stage. Dr. H. G. F. Edwards advised sternal puncture for diagnosis. Dr. Mathews urges that the puncture of sternum should be removed carefully with layers

in situ. Dr. Sanders mentioned the fact that malaria was not definitely ruled out in this case and advised examination of centrifugal blood or clinical test of quinine given by infusion.

The second case, by Dr. Reed, was one of latent bone syphilis, probably congenital, with negative Kahn. Microscopic examination of bone judged by Dr. Mathews to be most likely a syphilitic condition.

Third case, presented by Dr. Terry, was one of pseudo-hemophilia with apparently same condition present in his mother and two brothers. Coagulation time 10 plus minutes; red blood cells 3,130,000; bleeding 6 minutes and 30 seconds. Dr. Edwards recommended roentgen ray therapy over spleen for temporary relief of acute symptoms.

W. M. Hall, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

- April 4 Board of Directors, Orleans Parish Medical Society, 8 p. m.
- April 4 Pathologic Conference, Hotel Dieu, 8:15 p. m.
- April 5 Eye, Ear, Nose and Throat Hospital, 8 p. m.
- April 6 Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- April 6 Hutchinson Memorial Clinic Staff, 8 p. m.
- April 6 Mercy Hospital Staff, 8 p. m.
- April 7 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- April 8 French Hospital Staff, 8 p. m.
- April 11 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- April 13 Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- April 13 Touro Infirmary Staff, 8 p. m.
- April 15 I. C. R. R. Hospital Staff, 12 noon.
- April 18 Hotel Dieu Staff, 8 p. m.
- April 19 Charity Hospital Medical Staff, 8 p. m.
- April 20 Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- April 20 Charity Hospital Surgical Staff, 8 p. m.
- April 21 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- April 21 Eye, Ear, Nose and Throat Club, 8 p. m.
- April 21 New Orleans Hospital Council, Eye, Ear, Nose and Throat Hospital, 8 p. m.
- April 25 ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- April 26 Baptist Hospital Staff, 8 p. m.
- April 27 Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- April 28 Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- April 29 L. S. U. Faculty Club, 8 p. m.

Orleans Gynecological and Obstetrical Society, and one regular meeting. Interesting out of town speakers were on the programs of the joint meetings. At the regular meeting held Monday, March 28, a medico-legal symposium was given, on "The Relation of the Physician and Surgeon to the Administration of Justice." The following distinguished guests contributed to a very interesting program:

Honorable Harold A. Moise, Judge, Civil District Court for the Parish of Orleans.

Honorable William J. O'Hara, Judge, Criminal District Court for the Parish of Orleans.

Honorable Archibald T. Higgins, Associate Justice, Supreme Court of Louisiana.

Honorable George J. Gulotta, Assistant District Attorney for the Parish of Orleans.

St. Clair Adams, Esquire, Attorney for the Louisiana State Medical Society.

The members of the legal profession were invited to attend this meeting which was exceptionally well attended.

Longer Life Week was held March 20-26 inclusive. Syphilis was the subject selected this year which is in line with the national program. Members of the Society made addresses over the radio, before luncheon and civic clubs, Parent-Treacher Clubs, high schools, adult groups of churches, and employees of department stores and factories. Posters were distributed throughout the city. Members of the Woman's Auxiliary assisted in the distribution of these posters. An effort is being made to continue work along these lines in order that the entire city may be covered. Members desirous of making these talks are asked to send in their names to the Secretary's office at once.

Dr. John Signorelli gave a series of lectures to physicians of the Third District of Louisiana in New Iberia, held under the auspices of the Committee on Medical Education of the Louisiana State Medical Society and the State Board of Health, February 7-11.

Dr. Haidee Weeks spoke at the seventy-fourth annual meeting of the Chicago Dental Society.

During the month of March, the Society held a joint meeting with the New Orleans Graduate Medical Assembly, a joint meeting with the New

February 14-18. Her subject was "What Can Be Done In Prevention?"

Dr. W. H. Perkins, head of the Department of Preventive Medicine, Tulane University, addressed the Pulaski County Medical Society at Little Rock, Arkansas, February 14. His subject was "Undulant Fever."

On February 15, Dr. Isidore Cohn met with the Fracture Committee of the American College of Surgeons in New York City.

Drs. C. C. Bass, C. Grenes Cole, Rigney D'Aunoy, Roy B. Harrison, Maxwell E. Lapham, Urban Maes, John H. Musser, and James T. Nix attended the Council on Medical Education and Licensure in Chicago, February 14-15.

Drs. J. Raymond Hume, Edward L. King, and Alton Ochsner read papers before the Mid-South Post-Graduate Medical Assembly in Memphis, February 17.

Drs. Chaille Jamison and Philip H. Jones attended the Southern Interurban Club Meeting in Birmingham, February 18-19.

Dr. Hilliard E. Miller attended the meeting of the American Gynecological Club, of which he is secretary, February 19, at the Mayo clinic, Rochester, Minn.

At the February meeting of the L. S. U. Faculty Club, Dr. Earl Conway Smith spoke on "Clinical Study of the Effects of Camphor In Oil on Lactation"; Dr. J. K. Howles spoke on "A Study of Wassermann-fast Syphilis with an Evaluation of Therapeutic Measures."

On the program of the Society for Experimental Biology and Medicine, Southern Section, at their meeting February 25, was a paper on "Phosphorus Fractions of Human Heart Muscles" by Drs. George M. Decherd, Jr., and J. E. Blum, Jr.

Dr. Joseph D'Antoni presented a paper, "Dissemination of Parasites in Families," and Dr. W. H. Perkins spoke on "The Health of Large Families" at the scientific session of the Hutchinson Memorial Clinic, March 2, when the subject was "Health Studies in Family Aggregates."

Drs. Dean Echols and Michael DeBakey addressed the Fifth District Medical Society, in Monroe, March 3.

Dr. Herbert B. Rothschild spoke on "Infant Feeding" before the Louisiana State Dietetic Association at Charity Hospital, March 7.

Drs. Rigney D'Aunoy, A. J. Hockett, John H. Musser, Joseph A. O'Hara, and P. T. Talbot took part in the dedication program of the Midstate Charity Hospital at Alexandria, March 5.

Dr. John H. Musser addressed the Columbia (S. C.) Medical Society on "The Doctors' Disease—Coronary Occlusion," on March 14.

Attending the Southeastern Surgical Congress in Louisville, March 7-9, were Dr. Isidore Cohn who spoke on the "Logical Treatment of Osteomyelitis," Dr. Alton Ochsner, who gave the C. Jeff Miller oration on "Thrombophlebitis," and Dr. Ambrose H. Storck who spoke on "Gunshot Wounds of the Abdomen."

Drs. Donovan Browne, John Lanford, Gordon McHardy and Louis Ochs were guest speakers on the Health Week program of the Young Women's Christian Association, March 7-11.

At the meeting of the Eighth District Medical Society in Marksville, La., March 16, the speakers were: Dr. Arthur Caire, Jr., who spoke on "Obstetrical Anomalies as Handled in the Home"; Dr. I. M. Gage, whose subject was "Infections of the Hand." Dr. Julian Graubarth spoke on "Summer Diarrhea in Children," and Dr. Chaille Jamison on "Diseases of the Heart." Dr. I. L. Robbins opened the discussion on Dr. Jamison's paper.

Dr. Frederick F. Boyce was guest speaker at the Kansas City Academy of Medicine, March 18, when he spoke on "Recent Advances in Hepatic and Biliary Tract Disease."

At the Medical History Society meeting, March 18, Dr. Roy H. Turner spoke on "Some Medical Blunders."

It is with regret that we report the death of Dr. Earl A. Hogan.

The following doctors were elected to membership in the Society on March 10:

Active: Drs. James S. Webb and Joseph Ziskind.

Associate: Dr. John J. Young.

Interne: Dr. Wilhelmina C. Bacher.

TREASURER'S REPORT

Actual Book Balance: 1/31/38:	\$4,542.16
February Credits:	\$1,174.69
Total Credits:	\$5,716.85
February expenditures:	\$1,147.83
Actual Book Balance: 2/28/38:	\$4,569.02

LIBRARIAN'S REPORT

During February, 62 volumes were added to the Library. Of these, 43 were received by binding, 15 from the New Orleans Medical and Surgical Journal and 4 by gift. Notation of new titles of recent date is given below.

The Library has loaned to doctors during February, 792 books and journals. An additional 883 have been loaned to students for overnight use making a total of 1675 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

Members of the staff have collected material on the following subjects during February:

- Geriatrics.
- Autogenous vaccines.
- Spinal injection with alcohol in treatment of carcinoma of cervix.
- Toxicity of sulphur dioxide.
- Hemorrhagic cysts of ovary.
- Transmission of leprosy.
- Toxicity of lipiodol.
- Surgery of the heart.
- Tuberculosis of the skin.
- Empyema with effusion.
- Pleurisy, dry, plastic or serous.
- Tendon contractures.
- Wangensteen drip.
- Electric burns.

NEW BOOKS

Bailey, Hamilton: Demonstration of Physical Signs in Clinical Surgery, 1937.

Grinker, R. R.: Neurology, 1937.

Poynton, F. J.: Recent Advances in the Study of Rheumatism, 1937.

Wheeler, Alexander: Handbook of Medicine, 1937.

Davis, G. G.: The Pneumonokonioses, 1937.

Fischer, M. A.: Fischerisms, 1937.

Eagle, Harry: Laboratory Diagnosis of Syphilis, 1937.

Neymann, C. A.: Artificial Fever, 1937.

Steel, Matthew: Biological and Clinical Chemistry, 1937.

Grant, J. C. B.: Method of Anatomy, 1937.

Finney, R. P.: Story of Motherhood, 1937.

Todd, A. T.: Treatment of Some Incurable and Chronic Diseases, 1937.

Sears, W. G.: Medicine for Nurses, 1937.

Bullowa, J. G. M.: Management of the Pneumonias, 1927.

New York Academy of Medicine: Milestones in Medicine, 1938.

Northwestern University of Medicine: Report on the Assistance of Indigent Patients Suffering with Epilepsy, 1936.

American Laryngological, Rhinological and Otolological Society: Transactions, 1937.

G. C. Anderson, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

THE ANNUAL MEETING

The approaching meeting of the State Medical Society to be held in New Orleans May 2, 3 and 4, 1938 is assured to be one of the outstanding conventions in the long history of the Society. The local profession is sparing no effort to present an interesting scientific program. The subjects will be not only diversified in all specialties but special attention will be given to the most timely problems.

The program chairmen have been unusually fortunate in both the selection and acceptance of out-of-state speakers of national prominence who will be here to give the best of their knowledge and counsel. In the Section on General Surgery, Dr. James Barrett Brown of St. Louis, associated for a long period in plastic surgery and who has contributed so liberally to literature on subjects pertaining to reconstruction of deformities of the face, will speak on "The Care of Compound Injuries of the Face."

In a community in which allergic manifestations are so common and so often come under the observation of the general practitioner, it is of greatest interest to know that Dr. Ray M. Balyeat of Oklahoma City, an outstanding physician in this field,

will be on hand to illuminate the diagnosis and treatment of these problems.

In the field of gynecology and obstetrics, Dr. Virgil S. Counsellor of the Mayo Clinic, Rochester, Minnesota, will speak on "The Gynecological Problems Occurring in the Reproductive Period." This should be a splendid contribution which will be of great interest to those of you who are faced with baffling conditions in your gynecological as well as obstetrical practice.

The social arrangements which are always an important part of the Society's meetings are being looked after by the Orleans Parish Medical Society as well as the able and efficient Auxiliary, whose members are sparing no effort to make your stay and that of your wives a pleasant and profitable one.

We of the profession here in New Orleans are looking forward with a great deal of pleasant anticipation to having you with us as our guests and we hope that you will come early for the meeting and remain as long afterwards as your time will permit. A hearty welcome is assured you.

Waldemar R. Metz, M. D., Chairman,
Committee on Publicity.

THE SCIENTIFIC PROGRAM

The tentative program arranged for the meeting of the Louisiana State Medical Society at New Orleans, May 2-4, 1938, is given below. Certain minor changes may have to be made in this program, but, for the most part, it will stand as outlined. A few of the section chairmen have not, as yet, sent in completed programs, and these are omitted.

SECTION ON EYE, EAR, NOSE AND THROAT

Dr. Olin W. Moss, Chairman
Lake Charles

1. The Value of Bronchoscopy in Bronchiogenic Carcinoma (Lantern Slides).....
.....Dr. G. J. Taquino, New Orleans.
To open discussion.....
.....Dr. Val H. Fuchs, New Orleans.
Followed by.....Dr. C. J. Tripoli, New Orleans.
2. The Eye and Ear in Industrial and Social Life.....
.....Dr. Dorf Bean, Shreveport.
To open discussion.....
.....Dr. R. Ernest Smith, Minden
Followed by.....
.....Dr. T. J. Dimitry, New Orleans.
3. Causes of Blindness in Louisiana: A Survey of Hundreds of Cases.....
.....Dr. H. F. Brewster, New Orleans.
4. Ophthalmic Endocrinology (Lantern Slides).....
.....Dr. Charles A. Bahn, New Orleans.
To open discussion.....
.....Dr. Sydney Jacobs, New Orleans.
Followed by.....
.....Dr. Jonas W. Rosenthal, New Orleans.
5. Immunotransfusion in Otology.....
.....Dr. Mercer G. Lynch, New Orleans.
To open discussion.....
.....Dr. W. A. Ellender, Houma.
Followed by.....
.....Dr. John R. Hume, New Orleans.

SECTION ON GENERAL SURGERY

Dr. Waldemar R. Metz, Chairman
New Orleans

1. Surgery of Acute Cholecystitis (Lantern Slides).....
.....Dr. Mims Gage, New Orleans.
To open discussion.....
.....Dr. Howard Mahorner, New Orleans.
2. Stab Wounds of the Heart: A Case Report with a Note on Some Special Problems (X-rays).....Dr. A. L. Culpepper, Alexandria.
To open discussion.....
.....Dr. J. A. Danna, New Orleans.
3. Symptoms, Diagnosis and Treatment of Carcinoma of the Rectum and Rectosigmoid (Lan-

tern Slides).....Dr. B. C. Garrett and
.....Dr. L. L. Davidge, Shreveport.

- To open discussion.....
.....Dr. John A. Hendrick, Shreveport.
4. Burns and Unsolved Problems.....
.....Dr. Isidore Cohn, New Orleans.
 5. Hyperthyroidism (Lantern Slides).....
.....Dr. R. B. Wallace, Alexandria.
To open discussion.....
.....Dr. Alton Ochsner, New Orleans.
Followed by.....Dr. Ralph Lampert, Monroe.
 6. Thrombocytopenic Purpura: Three Case Reports.....Dr. John G. Snelling, Monroe.
To open discussion.....
.....Dr. Ambrose Storck, New Orleans.
 7. The Care of Compound Injuries of the Face.....
.....Dr. James Barrett Brown, St. Louis, Mo.

SECTION ON GYNECOLOGY AND OBSTETRICS

Dr. Rhett McMahon, Chairman
Baton Rouge

1. A Discussion of Some Gynecological Problems Occurring in the Reproductive Period.....
.....Dr. Virgil S. Counseller, Rochester, Minn.
To open discussion.....
.....Dr. H. W. Kostmayer, New Orleans.
2. Lower Morbidity in Conservative Obstetrics.....
.....Dr. Prentiss Gray, Jr., and
.....Dr. William F. Guerriero, Monroe.
To open discussion.....
.....Dr. D. C. McBride, Alexandria.
3. Stricture of the Cervix (Lantern Slides).....
.....Dr. Hilliard E. Miller and Dr. Conrad G. Collins, New Orleans.
4. Ruptured Tubo-ovarian Abscesses.....
.....Dr. N. J. Tessitore and
.....Dr. J. S. Potekin, New Orleans.
To open discussion.....
.....Dr. Peter Graffagnino, New Orleans.

SECTION ON MEDICINE AND THERAPEUTICS

Dr. C. C. deGravelles, Chairman
New Iberia

1. Liver Dysfunction: Its Diagnosis and Treatment (Lantern Slides).....
.....Dr. Allan Eustis, New Orleans.
To open discussion.....
.....Dr. Randolph Lyons, New Orleans.
2. Common Allergic Manifestations Encountered by the General Practitioner (Lantern Slides).....
.....Dr. Ray M. Balyeat, Oklahoma City.

- To open discussion.....
.....Dr. B. G. Efron, New Orleans.
3. Recent Advances in the Treatment of Pneumonia Dr. Charles L. Eshleman, New Orleans.
To open discussion.....
.....Dr. W. S. Kerlin, Shreveport
4. The Determination of Vitamin C Deficiency (Lantern Slides).....
.....Dr. Grace A. Goldsmith, New Orleans.
To open discussion.....
.....Dr. John Musser, New Orleans
5. Pulmonary Atelectasis (Lantern Slides).....
.....Dr. Chaille Jamison, New Orleans.
To open discussion.....
.....Dr. J. E. Knighton, Shreveport.
6. Malignant Hypertension: A Clinical and Pathological Study (Lantern Slides).....
.....Dr. G. M. Decherd, Jr., and
.....Dr. J. R. Schenken, New Orleans.
7. Insulin Allergy with Report of Severe Case and Successful Desensitization (Lantern Slides).....Dr. A. A. Herold, Shreveport

SECTION ON NERVOUS DISEASES

Dr. Walter J. Otis, Chairman
New Orleans

1. Myasthenia Gravis.....
.....Dr. L. L. Cazenavette, New Orleans
To open discussion.....
.....Dr. L. A. Golden, New Orleans.
2. Insulin and Metrazol Therapy in Dementia Praecox.....Dr. S. J. Phillips, Pineville.
To open discussion.....Dr. C. S. Miller, Jackson.
Followed by.....
.....Dr. Walter J. Otis, New Orleans
3. The Constitutional Psychopathic as a Community Problem.....
.....Dr. T. H. Pargen, Jackson.
To open discussion.....
.....Dr. E. M. Robards, Jackson.

SECTION ON ORTHOPEDIC SURGERY

Dr. John T. O'Ferrall, Chairman
New Orleans

1. Orthopedic Care of Early Infantile Paralysis (Motion Pictures).....
.....Dr. A. Scott Hamilton, Monroe.
To open discussion.....
.....Dr. T. M. Oxford, Shreveport.
Followed by.....
.....Dr. Paul A. McIlhenny, New Orleans

2. Subdeltoid Bursitis.....
.....Dr. Paul A. McIlhenny, New Orleans.
To open discussion.....
.....Dr. Guy A. Caldwell, New Orleans.
Followed by.....Dr. Muir Bradburn, New Orleans.

SECTION ON PEDIATRICS

Dr. Charles J. Bloom, Chairman
New Orleans

1. The Juvenile Diabetic: Dietetic and Insulin Management.....Dr. Paul H. Herron, Monroe.
2. Adrenal Tumors in Infancy and in Childhood.....
.....Dr. Albert R. Morgan, Crowley.
3. Intradermal Vaccination Against Smallpox with River's Culture Virus.....
.....Dr. S. George Wolfe, Shreveport.

SECTION ON PUBLIC HEALTH AND SANITATION

Dr. J. T. Cappel, Chairman
Alexandria

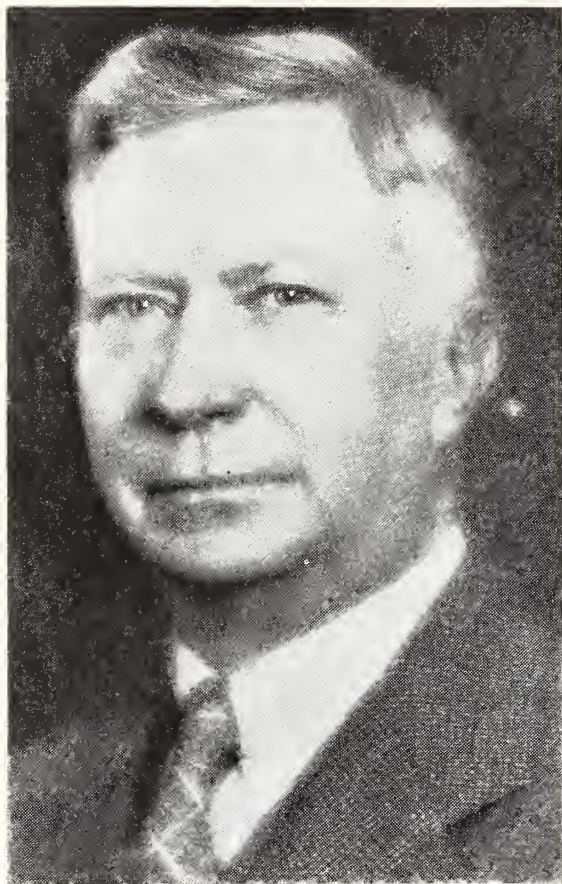
Symposium on Venereal Disease.

1. Present Status of Venereal Disease Control in Louisiana.....Dr. J. A. Coleman, Opelousas.
2. Diagnosis and Treatment of Gonorrhea in the Male (Lantern Slides).....
.....Dr. Edgar Burns, New Orleans.
3. Complications of Antisyphilitic Therapy (Lantern Slides).....
.....Dr. James K. Howles, New Orleans.

SECTION ON RADIOLOGY

Dr. C. P. Rutledge, Chairman
Shreveport

1. Pitfalls in the X-ray Diagnosis of Intestinal Obstruction (Lantern Slides).....
.....Dr. Lucien A. Fortier and
.....Dr. Tracy T. Gately, New Orleans.
To open discussion.....
.....Dr. Chaille Jamison, New Orleans.
2. X-ray Therapy in Conditions Other Than Cancer and the Manner of Its Administration (Lantern Slides).....
.....Dr. H. O. Barker, Alexandria.
To open discussion.....
.....Dr. Lester J. Williams, Baton Rouge.
3. Modern Radiation Technic, Uterine Cancer (Lantern Slides).....
.....Dr. S. C. Barrow, Shreveport.
To open discussion.....
.....Dr. M. D. Teitelbaum, New Orleans.



THE PRESIDENT

Charles Manly Horton was born in Lowndesville, South Carolina, on October 23, 1879. He graduated with the degree of A. B. from Furman University in 1898. For a period of eight years succeeding his graduation from college he was in the railroad business in the transportation department, first as telegrapher and later as train dispatcher.

The lure of medicine had been in his mind for years so that he entered Tulane University Medical School to graduate in 1911. Succeeding his graduation he served two years as an interne at the Charity Hospital and then went to Franklin, Louisiana, where he has been engaged in general practice since that time.

Dr. Horton has had many positions of responsibility, trust and honor. For twelve years he was coroner of St. Mary Parish and City Health Officer of Franklin. In his local Parish Society he has been president and he has been president also of his District Medical Society. In 1932 he was honored by the State Society by being elected second vice-president and in 1934 he was elected Chairman of the House of Delegates in which position he served two terms.

THE SCIENTIFIC EXHIBIT

Dr. Ambrose Storck, 1005 Union Building, Chairman of the Committee on Scientific Exhibit, is

extremely desirous of hearing from any members of the State Medical Society who can or will arrange an exhibit for the State Society Meeting on May 2. The exhibit is always one of the outstanding features of the meeting and it has been made so through the cooperation of the members of the State Society. He is very anxious to hear at the earliest possible moment from any member of the Society who can contribute to this invaluable educational feature of the State Meeting.

SECOND DISTRICT MEDICAL SOCIETY

On February 17, the Second District Medical Society met at the Colonial Country Club with Dr. J. S. George as host and Dr. W. F. Guillotte presiding. The following members were present: Drs. Guillotte, J. S. Kopfler, J. S. Parker, J. E. Clayton, P. A. Donaldson, E. P. Feucht, P. T. Landry, R. F. Gross, F. S. Herrin, L. O. Waguespack, L. T. Donaldson, E. A. Schexnayder.

It was moved by Dr. Landry and seconded by Dr. Feucht that Dr. Schexnayder's application for membership be accepted. Motion was carried unanimously. Dr. Herrin moved that the minutes be published each month in the New Orleans Medical and Surgical Journal; motion was seconded and carried.

Dr. Peter Graffagnino gave an interesting talk on office treatment in gynecology, stating that statistics prove that gynecology and obstetrics are a very large portion of general practice, gynecology usually being the result of obstetrical damage. The paper was discussed by Drs. Waguespack, Clayton, Landry, and Kopfler.

The next meeting will be held at the Colonial Country Club with Dr. Atkinson as host.

J. S. George, M. D., Sec.

FOURTH DISTRICT MEDICAL SOCIETY

The semi-annual meeting of the Fourth District Medical Society was held in Shreveport on March 1, 1938. The meeting was called to order by Dr. J. A. Hendrick, President. Dr. P. T. Talbot, Secretary-Treasurer of the Louisiana State Medical Society, was introduced and spoke briefly concerning the activities of the State Hospital Board and efforts of the State Society to gain the cooperation of this board with organized medicine. He stated that the Board of Trustees of the American Medical Association, through its Medical Economics Committee, is planning to aid various localities in determining the actual medical needs of that particular community. Dr. C. L. Peacock of New Orleans, Chairman of the Arrangement Committee of the State Medical Society Meeting, was introduced and spoke briefly of the plans for the coming annual meeting.

A resolution submitted by the Louisiana State Dental Society was read and, in line with this or-

ganization's request, the society adopted this resolution.

SCIENTIFIC PROGRAM

Dr. M. B. Whitten of Dallas gave a very instructive talk on "Myocardial Infarction." First, he illustrated with pictures of specimens and casts, the blood supply of the heart and the pathologic effects of infarction. He then showed typical electrocardiographic findings in infarction and emphasized the special value of axillary leads which he had first described. He touched on the diagnostic treatment, emphasizing the value of rest and morphine, and mentioned the possibilities of prophylaxis. Dr. Whitten's paper was discussed by Drs. T. P. Lloyd, M. D. Hargrove, J. E. Knighton, Sr., C. R. Gowen and N. J. Bender.

The next paper was by Dr. E. N. Cook of Mayo Clinic, on "Transurethral Prostate Resection." Dr. Cook gave a brief historical sketch on the development of transurethral prostatic instruments and mentioned the various methods used for treating the enlarged prostate. He outlined the pre-operative treatment in transurethral resections and pointed out that, in their experience, they had only had 2½ per cent recurrences. His talk was illustrated with pictures of the various types of instruments, diagrammatic illustrations of methods for removing the tissue and the varying amounts of tissue that had been removed in different cases to give relief. In summary, Dr. Cook expressed preference for the transurethral prostate resection; first, because the mortality is lower; second, the morbidity is less; and, third, it can be performed safely in the older group of patients. Dr. Cook's paper was liberally discussed by Drs. J. R. Stamper, I. B. Rougon, C. L. Peacock, J. D. Youman, George Robinson, and W. B. Allums.

P. D. Abramson, M. D., Sec.

SEVENTH DISTRICT MEDICAL SOCIETY

The Seventh District Medical Society held its second meeting of the year in Crowley, at the Egan Hotel, March 10. Dr. Olin W. Moss of Lake Charles, president of the society, presided and introduced the guest speakers. Dr. George Herrmann of Galveston, Texas, spoke on "The Present Status of Hypertensive Arterial Disease"; Dr. Dean Echols of New Orleans presented a paper entitled "Trigeminal Neuralgia." Both papers were illustrated and proved highly instructive. Drs. Herrmann and Echols were made honorary members of the society.

Dr. Claude Martin moved that the parish which entertains the district society be responsible for collecting fee incident to dinner preceding the meeting. This was seconded by Dr. J. A. Crawford and carried.

The following officers were elected for the year 1938: Dr. E. C. Faulk, Rayne, president; Dr. S. R.

Henry, Crowley, vice-president; Dr. J. W. Faulk, Crowley, secretary-treasurer.

The next meeting will be held in Rayne.

Louis Z. Kushner, M. D., Sec.

IBERIA PARISH MEDICAL SOCIETY

At a recent meeting of the Iberia Parish Medical Society, the following officers were elected for the year 1938: Dr. Wilton P. D. Tilly, president; Dr. J. N. Pharr, vice-president; Dr. B. L. Stinson, secretary-treasurer; Dr. L. M. Villien, delegate; Dr. Harold M. Flory, alternate.

At the same meeting, a splendid supper was served, especially honoring Dr. John Signorelli of New Orleans, who delivered during the week a short course in pediatrics. A number of doctors from St. Mary, Iberia and St. Martin parishes attended. Among the visitors was Dr. Charles M. Horton, President of the Louisiana State Medical Society, who made a short address of special interest to organized medicine.

Wilton P. D. Tilly, M. D., Pres.

ST. LANDRY PARISH MEDICAL SOCIETY OFFICERS, 1938

President: Dr. S. J. Rozas, Opelousas.

Vice-President: Dr. L. Lazaro, Opelousas.

Secretary-Treasurer: Dr. Edwin L. Landry, Opelousas.

THIRD DISTRICT MEDICAL SOCIETY OFFICERS, 1938

President: Dr. W. J. Yongue, Lafayette.

Vice-President: Dr. J. N. Pharr, New Iberia.

Secretary-Treasurer: Dr. H. A. King, New Iberia.

Delegate: Dr. O. P. Daly, Lafayette.

Alternate: Dr. R. D. Voorhies, Lafayette.

IMPORTANT NOTICE

REGARDING MEDICAL LIBRARY SERVICE

Increasingly numerous requests for medical library service have been coming from physicians outside of New Orleans to the Library of the Orleans Parish Medical Society and the Rudolph Matas Medical Library, which are administered jointly in the Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans. This may be readily understood, since there are no medical libraries of any considerable size in the State of Louisiana, outside of the City of New Orleans. The changing conceptions of disease and its treatment demand constant study on the part of the physician, in keeping abreast of the times, if he is to give to his patients the care which they expect of him. Younger men, particularly, who have had no opportunity to build personal libraries, are seriously handicapped by lack of medical books and journals for reference use in actual practice.

Certain agencies, notably the American Medical Association and the American College of Surgeons give a package library service to members, but these centers are located at a distance from Louisiana and there is a consequent delay in securing even the limited material which is available from these sources. The Army Medical Library (formerly called the Library of the Surgeon-General's Office) in Washington, D. C., loans books only to or through the agency of a Library, except in very exceptional cases. Thus the problem of medical library service is a very real one outside the large cities of the country. In realization of this need, the Orleans Parish Medical Society is considering the adoption of a plan, whereby it could extend its service to the physicians of the State.

The Library of the Orleans Parish Medical Society and the Rudolph Matas Medical Library with which it cooperates constitute the largest medical library in the South from coast to coast. The two collections contain approximately 53,500 volumes. Five hundred and fifty-six medical journals are received regularly. Six full-time persons are busy six days each week, caring for the library and filling the calls which come to it. These facilities can in large part be extended to the physicians of the State.

In studying the provisions which would be necessary to establish such an extension of medical library service, the systems in operation in the eight states in which some service of this kind is given to the physicians have been investigated. The material available varies from reprints and unbound journals to a more or less complete reference service. The latter method of more extensive library service is the one which we would offer from New Orleans. All library material except numbers from current volumes of journals, reserve books and books of exceptionable value, would be available for loan. Books would be loaned for fourteen days, parcels being sent from the library express collect and returned express prepaid or by parcel post.

The Library is in a position to offer even more than the privilege of borrowing books however. In connection with library service offered in New Orleans, there is record in the files of persons competent to prepare translations of foreign medical articles in different languages, persons who could abstract articles on a given subject, photographing service for material unavailable for loan, medical artists, and even the names of those able to help in the writing of medical papers. All of this service could be made available to the physician outside of New Orleans. In addition the Library could be the agent through which the physician could borrow books from the Army Medical Library, when titles needed are not in this collection.

The cost of this extensive library service would be slight in comparison with the advantages offered. Each Parish Society may join the Library as a unit, at the cost of one dollar per member per year. If this is not feasible, individual members of the State Society may join the Library at a cost of ten dollars per year (\$100 per life membership). The cost of other features mentioned,—art work, translation, abstracting, more extensive bibliographic work—not a part of the library service as such, would be arranged according to the actual work done in each case.

The Orleans Parish Medical Society owns and maintains its own Library. These plans have been formulated in an effort to extend the facilities of the Library to the physician of the State. A meeting to discuss this plan of library service, is to be held in the Library during the days of the State Society meeting in May. Each Society or individual interested is asked to communicate with Dr. Donovan C. Browne, Librarian of the Orleans Parish Medical Society, 1430 Tulane Avenue, New Orleans.

Donovan C. Browne, M. D., Librarian.

NEWS ITEMS

Dr. Hans Molitor, Head of the Division of Pharmacology of the Merck Institute of Therapeutic Research, discussed his work on Vitamin B₁ at the regular meeting of the Pharmacology Journal Club, Thursday, March 10, in the Pharmacology Laboratory of Tulane.

An Institute for Camp Administrators, Counselors and others interested in problems of camping will be held April 1-3 under the auspices of the New Orleans Council of Social Agencies.

The Louisiana Conference of Social Welfare was held in Monroe, March 17-19. Among others on the program were Drs. O. P. Daly and W. J. Sandidge. Dr. M. W. Hunter was the guest speaker at the luncheon given by the Tuberculosis and Public Health Association of Louisiana.

The American Association for the Study of Goiter announces that the Third International Goiter Conference will be held in the City of Washington, September 12-14, 1938.

The American Association on Mental Deficiency will hold its sixty-second annual meeting in Richmond, April 20-23, 1938, with headquarters at the Hotel Jefferson. An excellent and stimulating program has been provided.

Dr. A. William Leschier was elected President of Parke, Davis & Company, and Norman H. F. McLeod Chairman of the Finance Committee, at a

meeting of the Company's Board of Directors held in Detroit on March 1. Both men have been actively connected with the Company for about thirty years. Dr. Lescobier has been General Manager and a Director since 1929, and Mr. McLeod a member of the Board since 1921, and Secretary and Treasurer since 1923.

GASTROENTEROLOGIC SOCIETY

The January Meeting of the Louisiana Chapter of the National Society for Advancement of Gastroenterology was held at the Marine Hospital, New Orleans, through the kindness of Dr. Slaughter, the superintendent, who also served as an admirable host at a delicious dinner immediately preceding the meeting. Dr. Levin presided, and the program following was most interesting and sufficiently elaborate to make the evening well spent which was obvious judging from the attendance.

"Surgical Aspect of Carcinoma of the Stomach," by Dr. James D. Rives was quite an exhaustive paper on the subject and excited considerable discussion by Drs. Eustis, Brown, Maes and Levin, who all voiced the plea for an early diagnosis, early surgery, with relief and comfort to the victim when a thorough cure seemed impossible.

"Differential Diagnosis between Sprue and Pernicious Anemia" by Dr. Aldo Castellani was fruitful, pointing to the opposite characteristics of the diseases, and laying great stress on the rhamnose test which is essentially the administration of the sugar rhamnose to an individual. The intestinal lesions existing in the patient with sprue prevent the absorption of the sugar with a subsequent loss through the feces. But, the pernicious anemia patient, without the intestinal pathology, readily absorbs the rhamnose which can be recovered and identified in the urine. The value of the test as a differential diagnostic factor is readily appreciated.

The last paper "Regional Ileitis or Crohn's Disease" by Dr. W. E. Waugh was an extensive report on the infection of the lower ileum, demonstrated by a patient under treatment and now slowly convalescing, and accentuated by a set of photographs and slides.

OPENING OF MID-STATE HOSPITAL

With appropriate ceremonies, including a large barbecue and evening banquet, work was started on the new Mid-State Charity Hospital at Alexandria. Under the energetic auspices of Dr. Isadore Brickman, the affair went off smoothly and gave much pleasure to those who attended. At the evening banquet, amongst the speakers, were Drs. D'Aunoy, Talbot, Hockett, Musser, and Todd from New Orleans; Dr. Sanderson from Shreveport; Dr. O. P. Daly of Lafayette, representing Mr. A. R.

Johnson, Director of the State Hospital Board; Drs. King Rand, T. F. Moore, and D. C. McBride of Alexandria, the latter President of the Rapides Parish Medical Society; Dr. W. F. Couvillion, of Marksville, Councilor of the Eighth Congressional District; Dr. Cecil Lorio of Baton Rouge; and Dr. Charles M. Horton, President of the State Medical Society.

Dr. Horton commended the present arrangement for the care of the indigent sick. He spoke of it as being ideal, but he said that there is always a chance, under different administration, of the broadening of the basis for the admission of patients. He said: "It is for the future that we must be on our guard."

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the seventh week of the year, ending February 19, syphilis, as is customary, led all reportable diseases with 218 cases recorded during the week. Other diseases appearing in double figures in order of frequency were 44 cases of pulmonary tuberculosis, 31 of chickenpox, 26 of pneumonia, 21 of cancer, 20 of whooping cough, 19 of typhoid fever, 15 of influenza, 11 of measles and 10 of diphtheria. Of the unusual cases reported this week, there was one case of typhus fever originating in Calcasieu, one case of smallpox in East Baton Rouge, and two cases of undulant fever in Orleans. Eight cases of typhoid fever were reported from Orleans, of which four were imported. For the week ending February 26, syphilis again outnumbered other reportable diseases with 50 instances, followed by 55 cases of gonorrhea, 41 of pneumonia, 34 of pulmonary tuberculosis, 25 of typhoid fever, 18 of chickenpox, 15 of diphtheria, 14 of cancer, 13 of scarlet fever and 12 of whooping cough. One case of undulant fever was reported from St. James Parish; one case of tularemia from Pointe Coupee. Of the 25 cases of typhoid fever reported, 16 were from Jefferson, six from Orleans and three from other parishes scattered throughout the state. For the next week, ending March 5, the incidence of syphilis dropped materially to 39 cases, followed by 23 cases each of pulmonary tuberculosis and chickenpox, 22 of pneumonia, 21 of typhoid fever, 12 of whooping cough, 11 of scarlet fever and 10 each of diphtheria and cancer. Seven of the typhoid fever cases came from Orleans Parish, six from Iberia and four from Jefferson. A case of undulant fever was reported from Calcasieu; one case each of rabies and leprosy was reported from Orleans. For the last week for which figures are available, March 12, syphilis jumped up again to its commanding position at the head of the list with

148 cases, followed by 51 cases of pulmonary tuberculosis, 40 of pneumonia, 19 each of typhoid fever and scarlet fever, 18 each of whooping cough, cancer and chickenpox, 12 of malaria, and 11 of measles. Typhoid fever was still being reported from Jefferson where a mild epidemic is existent; six cases were reported from Orleans, three of which were imported, probably from Jefferson. There were four cases of cerebrospinal meningitis reported from Orleans Parish, three of which were brought in from outlying parishes to Charity Hospital. One case of smallpox was reported in both Calcasieu and Franklin. A case of poliomyelitis was recorded from St. Mary and one case of undulant fever from Caddo.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reports that for the week ending February 12, there were listed 169 deaths in the City of New Orleans, 112 white and 57 negro. This was a decrease in the number of the preceding week. There were 15 deaths in infants under one year of age. Again there was a diminution in the number of deaths from the preceding week during the week ending February 19. One hundred forty-eight deaths were listed of which 90 were among the white and 58 among the negro population. There were only 10 deaths in infants under one year of age. In the next week, which came to a close February 26, of the 149 deaths recorded, only nine were in infants, whereas 90 occurred in the white section of the community and 59 in the negro. For the week ending March 5, there was an increase to 162 recorded deaths. The increase was largely in the white population with 108 deaths, whereas the negro mortality was very low, only 54 colored people expiring this week. The infant deaths were 14 in number, nine white and five negro. For the week ending March 12, there was material diminution in the number of deaths, they falling to 134 instances, divided 88 white and 46 negro. In this week there were 10 deaths in infants under one year of age.

J. W. KENWARD SHAW, M. D.

Dr. J. W. Kenward Shaw, who had been actively engaged in the practice of medicine for nearly fifty-one years, died at his home in New Iberia on February thirteenth. He was graduated from the College of Physicians and Surgeons of Baltimore in 1887, and specialized in eye, ear, nose and throat work.

Dr. Shaw had been active in the social and civic affairs of the parish during his entire life. He founded the local chapter of the Woodmen of the World and he was still a member of the organization. He was a member of the local Masonic Lodge, a Knight Templar, a Pythian, an Odd

Fellow and a member of the Bienfaisance. He was a member of the first Iberia Parish School Board and was coroner of the parish for four years. Dr. Shaw was actively interested in both parish and state medical societies.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

ORLEANS PARISH

The March meeting of the Woman's Auxiliary to the Orleans Parish Medical Society was held on Wednesday, March 9, at 3 p. m. at the Orleans Club with an attendance of one hundred and fifty members.

The guests of the afternoon were the visiting ladies attending the Medical Assembly. The meeting proved to be a most interesting one, as the entire revised Constitution and By-Laws were voted and accepted.

Though plans for Doctor's Day had been completed, as a recommendation from the Board, the general body voted to eliminate celebrating Doctor's Day with a party this year as was originally planned, because March 30 is a Lenten fast day and the State Medical Convention follows so soon afterward.

Mrs. C. C. Henson gave a most interesting review on Lyle Saxon's book "Children of Strangers."

Mrs. Fred Fenno and her committee served most ably in charge of the Information Booth for the Medical Assembly.

Committees on Social Hygiene and Periodic Health have assisted Dr. Sellers and his committee in the Longer Life Week program by distributing posters throughout the city as directed.

Mrs. S. M. Blackshear, Chairman,
Press and Publicity.

JEFFERSON DAVIS PARISH

The February meeting of the Woman's Auxiliary to the Jefferson Davis Parish Medical Society was held in Welsh, at the home of Mrs. Claude A. Martin, with a perfect attendance. Each member contributed a current event pertaining to medical science.

The March meeting was held in Jennings at the home of Mrs. John M. Whitney. Dr. Whitney, who is in charge of the Parish Health Unit, gave a most interesting talk explaining the divisions of the Unit, their functioning and how the Unit is maintained. This talk was made at the request of the auxiliary. A rising vote of thanks was given Dr. Whitney. This was one of the most outstanding programs since the auxiliary has been organized.

Officers for the year of 1938-39 were elected as follows:

President—Mrs. Claude A. Martin, Welsh.
 Vice-President—Mrs. John M. Whitney, Jennings.
 Secretary—Mrs. John G. McClure, Welsh.
 Treasurer—Mrs. Morgan Smith, Jennings.

It was decided at this meeting to hold only four meetings during the year, instead of the usual eight. These meetings will be held in May, October, January and March.

Mrs. Claude A. Martin, Chairman,
 Press and Publicity.

PUBLICITY CHAIRMEN PLEASE NOTE!

There remains but one more month before the present term of office as Press and Publicity Chairman expires. Please do your best to send me something for next month's Journal article.

There is much talk about the State meeting in New Orleans on May 2, 3, and 4. If you have not already made your plans to attend, do so at once. You will miss a mighty fine time, if you do not. The style show that will be given through the courtesy of Gus Mayer Company is really going to be something to see. Hope you'll be with us!

Mrs. Lucian W. Alexander, Chairman,
 Press and Publicity.

BOOK REVIEWS

A Monograph on Veins: By Kenneth J. Franklin, D. M., M. R. C. P. Springfield, Ill., Charles C. Thomas, 1937. Pp. 410. Price \$6.00.

The author has spent several years in study of the venous system and his object in writing was to make available a somewhat recondite literature, which only a specialist could hope to summarize but which has, nevertheless, very definite bearings upon physiologic, pathologic and clinical problems.

A vein, in general, is to provide a channel for the return of blood to or towards the heart, but the venous system as a whole is more than this. In certain places it takes part in absorption; it may be concerned with the output of fluid into tissues, certain venous areas may act as reservoirs of blood, and so on.

Not all of the blood need necessarily be in circulation but part of it may be in reserve, motionless or in very slow circulation, and this may amount to 46 per cent of the total. Muscular exercise is the most important call on the depot blood, temperature regulation the next. The spleen, the liver, the portal system, the subcapillary venous plexus of the skin, the lungs, the uterine veins and the large veins are organs and portions of the vascular system, in decreasing order of importance, which have a capacity for blood storage. The essential differences between the capillary and the immediate postcapillary venule are the greater size of the venule, and the presence upon it of connective tissue. The venules are independently contractile, and they help to provide the peri-

pheral resistance. Diapedesis occurs more readily from venules than from capillaries because the blood stream is slower. The production of tissue fluid occurs in the small venules as well as in the capillaries. The venules play an important part in the reactions of the vessels of the skin, possessing considerable contractile power.

Venules are concerned with the reabsorption of water, with the absorption of freely diffusible electrolytes, and with absorption of less diffusible substances, provided that the balance of local conditions controlling these movements is temporarily in favor of a direction of flow from the tissue spaces to the blood. In addition, the walls of larger veins permit the passage of certain solutions inward into the blood.

The musculature of the veins controls the volume of a large part of the venous system and associated blood depots, and hence the venous return and heart minute volume. It does this as a coordinate whole, when innervation is intact. Veins respond to mechanical, thermal and chemical stimuli. The main factors influencing the venous return to the heart are the *vis a tergo*, hydrostatic pressure (gravity), and muscular contraction (exercise) aided by venous valves. A rise of venous pressure will increase the minute volume of the healthy heart and its minute rate. Muscular activity has a definite accelerator and augments effect upon the venous return and thereby upon the whole circulation of blood. This is in sharp distinction to the effect of respiration, about which no such sweeping conclusion can be drawn. The knowledge

of venous pressure in spite of what has actually been accomplished, is far from complete. The author discusses the technic, general considerations, the initial pressure in the venous system, (pressure in venous capillaries), the pressures in medium and large-sized veins, the pressure at the end of the venous system. A subatmospheric pressure obtains under normal conditions in the great veins within the thorax. A rise of caval pressure may be associated with increased or decreased heart minute volume; in the latter case it is a sign of an embarrassed heart.

The movements of the blood in veins, "stream lines," and of normal arteriovenous anastomoses in certain parts of the body, physiologic (centripetal) and pathologic (centripetal and centrifugal) pulsation in veins occupy the last general chapter. Two chapters deal respectively with clinical considerations and photographic technics, respectively.

The review is primarily intended for those engaging in research, but it will be of interest to all who wish to know more about veins, and the important interactions within the living organism. This is an interesting and authoritative work.

HENRY LAURENS, Ph. D.

The Thinking Body: By Mabel Elsworth Todd.
New York, Paul B. Hoeber, Inc., 1937. Pp. 314.
Price \$4.00.

This volume is a discussion of posture and locomotion from a new angle. In the first part of the book, the author presents a careful and complete study and explanation of the mechanism of the body functions in relation to their action. The component parts of the skeleton are described in detail, as are the structures formed by their union. Emphasis is placed on the significance of these structures in correlated behavior of the body mechanism. In the second part of the book, the author presents her own interesting theories as to the part played by unconscious sensations in body control and stresses the importance of conscious and intelligent control of the coordinated physical functions. Simple and practical methods of treatment are suggested, based on the author's extensive experience. The chapters on walking and breathing are of particular interest. The volume is well illustrated.

Although the reader may not always agree with the author's views, he cannot fail to be stimulated by the profound and original treatment of the subject. The book should be of more than usual interest in physical education, hygiene and physical therapy.

H. S. MAYERSON, Ph. D.

Not So Long Ago: By Cecil K. Drinker, M. D.,
Sc. D. New York, Oxford University Press,
1937. Pp. 183. Price \$3.50.

This is a fascinating little volume which has to

do with a period of nearly fifty years' life in Philadelphia during Colonial times. The diary of Elizabeth Sandwith Drinker was begun in October, 1758, and continued until 1807. The content of the book has to do largely with a partial reproduction of the diary kept conscientiously all this time. Here and there Drinker, the descendant, has made pertinent comments which materially add to the understanding of the diary and which indicate clearly the changes that have taken place in manner of living, in the treatment of disease and in medical customs and habits in the last nearly 150 years.

The book should be particularly interesting to a physician because a goodly part of it has to do with such subjects as smallpox and the fevers, yellow fever in Philadelphia, and medical practice in 1800. The diarist comments interestingly on some of the great physicians of the time, as Kuhn, Rush, Physick and Shippen, who are mentioned casually at times, again with considerable detail. Also the physician should be charmed by the diarist's account of the tuberculosis of William Drinker.

With an excellent format and well illustrated, the book would make a nice present for the doctor to give to one of his fellow practitioners or for a patient to give to the physician.

J. H. MUSSER, M. D.

Practical Treatise on Diseases of the Skin: By
Oliver S. Ormsby, M. D. Philadelphia, Lea &
Febiger, 1937. Pp. 1334. Price \$12.00.

This fifth edition, enlarged and revised, with a special revision of the "Histopathology and Mycology" by Clark Wylie Finnerud, B. S., M. D., is recognized as a leading textbook in the field of dermatology. Besides a complete review of dermatologic literature, it is up to the minute in modern methods of treatment and concise enough that the facts can be read in the smallest justifiable space. Dr. Ormsby writes from experience, first hand knowledge and without bias. The selection of photographs is excellent.

M. T. VANSTUDDIFORD, M. D.

External Diseases of the Eye: By D. T. Atkinson,
M. D., F. A. C. S. Philadelphia, Lea & Febiger,
1937. Pp. 918. Price \$8.00.

This excellent volume is written primarily for those who are interested in the clinical and the surgical. It possibly lacks the technical background of most textbooks, which has the advantage of increasing its readability. The illustrations are exceptionally numerous and informative.

Following a short historical sketch of ophthalmology, the author discusses diseases of the lids in about one hundred and fifty pages. The chapters on lid and orbit are outstanding.

Being at heart a surgeon, the author apparently understands the non-surgical treatment of glaucoma. He apparently believes that myotics are

useful only when an immediate operation cannot be performed. Those of us who have kept simple glaucoma patients practically stationary for twenty years with myotic treatment alone naturally feel that the risks of operation are not always justified.

A more detailed description of the slit-lamp microscope and its findings in the chapters on cornea and lens would have added materially. Written apparently for ophthalmologists of moderate experience, more detailed description of methods which increase the safety of operative procedures would have been justified throughout the volume, such as akinesis, orbital anesthesia, superior rectus fixation, and corneal suturing.

In muscle shortening operations, the authors' preference of a modified Valude advancement seems to have little advantage over the more generally used resection. The final chapters on ocular hygiene, history taking and ocular remedies contain much useful information especially to the beginner.

The detailed table of contents is especially informative, the index reasonably complete, and the bibliography rather concise.

In conclusion, ophthalmologists of moderate experience and those who are especially interested in the pictorial presentation of the subject will make no mistake in reading and re-reading Dr. Atkinson's valuable volume.

CHARLES A. BAHN, M. D.

Doctors on Horseback: By James Thomas Flexner. New York, The Viking Press, 1937. Pp. 370. Price \$2.75.

It is fitting that the first book from the pen of the son of Simon Flexner should concern itself with the personalities and contributions of some of the outstanding pioneer American physicians.

Mr. Flexner brings to life for us such men as John Morgan, who established the first medical school in America, with educational requirements as revolutionary in the field of medicine as was the new democracy in the field of politics; Benjamin Rush, whose medical theories, especially purging and bleeding, dominated American medicine for fifty years; Ephraim McDowell, who performed the first ovariectomy while the local minister preached a sermon against his daring; Daniel Drake, who loved the frontier country and devoted himself to medical education beyond the Alleghenies; William Beaumont, who overcame his lack of education and the obstinacy of the refractory St. Martin to study comprehensively the workings of the stomach; Crawford Long, the Georgia physician, and William Morgan, the Massachusetts dentist, who, independently of each other, discovered the possibilities of ether anesthesia. These turbulent pioneers, isolated from the centers of learning, fought ignorance and superstition, their own as well as that of others, and out of

their struggles came many of the new concepts and practices upon which modern medicine is based.

Mr. Flexner has sorted the facts and legends about these men with great judgment and given us sketches which are true in spirit as well as in fact. He has the ability to reconstruct vividly isolated scenes, notably McDowell's operation, and the tavern brawl at Fort Mackinac in which Beaumont's patient received the wound that led to his fistula. "Doctors on Horseback" is equally interesting to the physician, to the student of early American life, and to the layman.

W. A. SODEMAN, M. D.

Biological and Clinical Chemistry: By Matthew Steel, Ph. D. Philadelphia, Lea & Febiger, 1937. Pp. 770. Price \$8.00.

This volume, which adds to our collection of laboratory manuals, is a comprehensive survey of the common chemical methods used in biological chemistry. The book is divided into five parts dealing with chemistry of the organic constituents of cells, physical chemistry, catalytic phenomena, chemistry of circulation, and nutrition.

The treatment of the subjects is very much like that in similar manuals, with however, the added advantage of containing a larger number of detailed experimental procedures than most laboratory manuals. A considerable portion of the book is devoted to theoretical considerations having a direct bearing on experimental procedures.

To my mind, the outstanding section of the book is that dealing with physical chemistry. In this section the author deals with the fundamental physical and chemical phenomena, in a logical and lucid manner. On the whole, the book constitutes a rather handy reference volume.

SAMUEL R. NADLER, M. D.

Macleod's Physiology in Modern Medicine: Edited by Philip Bard. St. Louis, The C. V. Mosby Company, 1938. Pp. 1,051. Price \$8.50.

The first edition of this book was a departure from type. Macleod showed clinicians, teachers as well as practitioners, the application of scientific information concerning disease (functional pathology) to the practice of their art, and thereby the futility of searching for the understanding of disease largely by the empirical method. Designed for the practitioner the work soon became known to students and teachers of physiology and became widely used as a text. The seventh edition appeared only a short time before the death of Professor Macleod.

The present editor invited eight contributors to help him bring out this, the eighth edition, and each major subdivision is the work of a writer who is actively engaged in the study of some phase of the subject he treats.

The editor emphasizes that the present volume

makes no pretense of being a textbook of "applied" physiology, because the contributors have in general invoked clinical material only when it illustrates particularly well fundamental physiological principles. He hopes that the book will not supply predigested knowledge suitable for immediate bedside application. The title "Physiology in Modern Medicine" has been retained, however, because it is clear that the greatest service which physiology can render modern medicine is to continue to solve fundamental problems which are not necessarily of immediate practical concern, to acquaint the student in his preclinical days with the real importance of these and to imbue him with some appreciation of the nature of valid experimental evidence.

The book well serves its avowed purpose and continues to be one of the outstanding treatises on "modern physiology."

HENRY LAURENS, PH. D.

Wheeler and Jack's Handbook of Medicine: Edited by John Henderson, M. D. Baltimore, William Wood & Co., 1937. Pp. 703. Price \$4.00.

The popularity of this 700-page "handbook" may be judged by the fact that it has gone through ten editions since 1894. Though the author specifically states that his book is not to be regarded as a text, the final product comes perilously close to being neither "man nor beast." The devotion of less than a page to essential hypertension while discussing thoracic aneurysm in detail, seven pages, implies a lack of balance. The details of clinical laboratory procedures are included, as are the elements of physical diagnosis, occupying space that could better have been devoted to amplifying and modernizing the sections on therapy, which in general are entirely inadequate.

GEORGE M. DECHERD, JR., M. D.

Recent Advances in Rheumatism: By Frederic J. Poynton, M. D., F. R. C. P. (Lond.), and Bernard Schlesinger, M. A., M. D., (Camb.), F. R. C. P. (Lond.) Philadelphia, P. Blakiston's Son & Co., 1937. Pp. 379. Price \$5.00.

The first edition of this excellent monograph appeared in 1931. There is really need for the revision because there has been an immense amount of work accomplished in the study of rheumatism in recent years. This is in part responsible for the tardiness of the appearance of the second edition because the literature to be reviewed was literally overwhelming, to paraphrase the preface.

The book follows the same general form as did the first edition, but it has been enhanced considerably by incorporation of new facts which have been brought out about rheumatism. The first portion of the book has to do with rheumatic fever or acute rheumatism; the second portion

with chronic rheumatism. It is not customary in this country to regard the two conditions even as being comparable but apparently in England such is the case. We consider rheumatic fever to be a more or less definite etiologic entity, whereas rheumatoid arthritis may be due to any one of a number of causes, no one of which is definitely established. This does not lessen the value of the book but the reader should understand clearly that the newer material is not devoted solely to rheumatic fever and its expressions, but about half of the page space is assigned to so-called chronic rheumatism in its various aspects, from arthritis deformans to lumbo-sacral and sacro-iliac strain.

As a splendid review of the old and the recent literature on the two subjects contained in the book this volume is to be recommended most highly.

J. H. MUSSER, M. D.

PUBLICATIONS RECEIVED

The Commonwealth Fund, New York City: *Pneumonia and Serum Therapy* by Frederick T. Lord, M. D., and Roderick Heffron, M. D.

Harvest House, New York City: *Men Past Forty* by A. F. Miemoeller, A. B., M. D., B. S.

The Johns Hopkins Press, Baltimore: *On a New Gland in Man and Several Mammals* by Ivar Sandstrom (Upsala Lakareforenings Forhandlingar, 1879-80, 15, 441-471). *On Thought in Medicine* by Hermann von Helmholtz, An Address delivered August 2, 1877, on the Anniversary of the Foundation of the Institute for the Education of Army Surgeons.

Lea & Febiger, Philadelphia: *Handbook of Social Hygiene*, edited by W. Bayard Long, M. D., and Jacob A. Goldberg, M. A., Ph. D., F. A. P. H. A. *Clinical Roentgen Therapy*, edited by Ernest A. Pohle, M. D., Ph. D., F. A. C. R.

C. V. Mosby Company, St. Louis: *Management of the Sick Infant and Child* by Landley Porter, B. S., M. D., M. R. C. S. (Eng.), L. R. C. P. (Lond.), and William E. Carter, M. D. *Workbook in Elementary Diagnosis for Teaching Clinical History Recording and Physical Diagnosis* by Logan Clendenning, M. D.

G. P. Putnam's Sons, New York City: *How Ancient Healing Governs Modern Therapeutics* by K. Ligeros, M. D., Ph. D.

W. B. Saunders Company, Philadelphia: *Treatment in General Practice* by Harry Beckman, M. D. *A Textbook of Ophthalmology* by Sanford R. Gifford, M. A., M. D., F. A. C. S.

The Science Press Printing Company, Lancaster, Pa.: *A Biological Approach to the Problem of Abnormal Behavior* by Milton Harrington, M. D.

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FACTORS INFLUENCING THE DEVELOPMENT OF TUBERCULOSIS

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Many people have tuberculous infection and relatively few have clinical disease. Several factors other than the tubercle bacillus help to determine the results of infection and the fatality of the disease. Had the tubercle bacillus caused continually the same ratio of fatal disease to infection that was existent a century ago, probably eight times as many deaths from this cause would now be occurring as actually are taking place. In 1835¹ the pulmonary tuberculosis death rate for New York, Philadelphia and Boston was about 420 per 100,000. Something has happened to bring about a marked reduction. Of course we immediately think of the discovery of the infectious nature of the disease (1865) and of the tubercle bacillus (1882) and the subsequent antituberculosis measures as leading the way to better prophylaxis. Undoubtedly these factors have all had their influence. Even the part-time isolation of the patient with positive sputum has lessened his opportunity of infecting others. The recognition of modes of transmission, the discovery of the disease in its earlier manifestations, the practice of better health habits and of more efficient methods of treatment have all contributed toward gradual lessening of infection and the absolute and relative proportion of fatal cases. But before any of these factors were recognized as being effective, even before the discovery of the tubercle bacillus, the death rate for tuberculosis had shown appreciable decline in some regions, reflecting perhaps the activity of other factors than those already mentioned. Thus Pearson, quoted by Pearl², showed that the tu-

berculosis death rate in England fell before the general death rate during the years 1847 to 1866. This was before the period of better sanitation. From 1866 to 1891, during the period of greater sanitation, the tuberculosis mortality rate fell more markedly than the general death rate. From 1891 to 1910, during which period the knowledge regarding etiology and methods of dissemination were applied and sanatoria were established and other antituberculosis measures were taught and were being applied, the fall in the death rate from tuberculosis was retarded. This happened in other countries, too. The mortality rate which was falling at a steady rate in older countries ceased to fall at the same rate almost at once following the discovery of the tubercle bacillus.

HEREDITY

Some have thought that hereditary factors were at play but with the great proportion of the population infected and the high ratio of clinical disease and death, the relation of heredity to the disease could not be accurately studied. The idea of hereditary factors having any influence on the mortality rate was gradually forced into the background and vigorously denied by some, even as it is today. But there has been an awakened interest in recent years. An examination into the probable relation of heredity to tuberculosis may prove interesting if not conclusive.

Macklin³ says that the entire developmental potentiality of the individual depends upon the chemical and physical structure of the chromosomes. These are packets of genes arranged more or less like beads upon a string. The same genes occur in chromosomes of the same species. Linked genes are those occurring in the same chromosomes; they are transferred into the mature germ cell in a group and in one

chromosome. There are 48 chromosomes in the human. The sex chromosomes of the female are alike; one of those of the male is like those of the female, the other is shorter and differs in other respects. The male sperm determines the sex. When two similar chromosomes combine the sex is female; when unlike chromosomes unite the sex is male. Sex chromosomes must carry other characters since there are only 48 chromosomes for all characters, but these are almost entirely recessive. It is probable that they carry dominant abnormal factors.

Upon union the male cell loses its cytoplasm and the female cell retains it. The nucleus and cytoplasm undergo change which ultimately results in division of the two nuclear chromatins into two equal parts. This division is quantitative and qualitative. Only one of the united pair of chromosomes enters the maturing germ cell. In this separation of the groups of chromosomes lies the secret of genetics. Combinations and recombinations can occur and for this reason traits are not alike in all progeny.

Macklin reports the observations of Diehl and Verschuer upon 127 pairs of twins, regarding inheritance in tuberculosis; 45 identical and 82 fraternal. Seven pairs of twins had common exposure to tuberculosis but only one of each pair developed the disease. Six of the seven pairs were fraternal. Thus fraternal twins with differing heredity but similar environment formed 86 per cent of the group, although only 65 per cent of the entire series was fraternal. This is expected when heredity plays a part.

Twelve pairs were exposed to healthful and identical environment. Five of these pairs had only one member affected and all of these were fraternal. Seven pairs had both members affected. Five of these, or 71 per cent, were identical and two pairs, or 29 per cent, fraternal. With identical environment and differing response fraternal twins made up the entire series. With identical response identical twins formed twice as large a group as they should on the basis of expectation.

Both members were affected in 25 per cent of the fraternal and 70 per cent of the identical twins, and agreement as to location and course of the disease was twice as frequent in identical twins as disagreement. But in fraternal

twins disagreement was 14 times as common as agreement.

An interesting example of familial susceptibility is mentioned by Machlin: Family A had five children and they lived next door to family B with five children. The children played together constantly and in the house of B as much as in the house of A. They drank the same water and milk. Family B had three die of tuberculosis and one of diphtheria. Several had typhoid fever; all had the childhood infections. Family A had no tuberculosis, no typhoid and only one case each of mild measles and mild scarlet fever.

From the study of the twins it would seem likely that heredity did play a part in the occurrence and course of tuberculosis. Others in commenting upon these studies have vigorously denied any possible connection (Redecker et al).

It is unfortunate that the opportunity for the study of identical and fraternal twins is necessarily so much limited. However, the question may be approached from another angle, the study of family groups. Thus Raymond Pearl⁴ studied the occurrence of tuberculosis in groups arranged according to the presence of tuberculosis in the ancestries. He came to the following conclusions: (1) The proportion of tuberculous offspring increases with the amount of tuberculous ancestry; (2) the influence of one tuberculous parent is only slightly in excess of tuberculosis in the grandparental generation; (3) the influence of a second tuberculous parent just doubles that of the first; (4) the proportion of tuberculous offspring, although related to, does not vary numerically with the amount of close contact; (5) the proportion of non-tuberculous offspring in close contact parentally is high. Pearl, quoted by Struthers⁵, says that 7 per cent of blood relatives within all generations studied were tuberculous, whereas only 1.2 per cent of the blood relatives of a non-tuberculous person were tuberculous.

FAMILY HISTORY

Turner⁶ concluded that the incidence of tuberculosis was greater at all ages when the source of contact had itself contact with a sputum positive case and that the death rate was greater between the ages zero to five and 15 to 35 years under the same conditions than when

the immediate source of contact had no contact with a sputum positive case. This was thought to suggest an inheritance factor, susceptibility or metabolic variation. Another interesting observation was that the incidence rate of tuberculosis was greater for all ages except five to 15 years in households of more than six and greater for ages five to 15 years in households of less than six. When the tuberculous patient shared his bed with another, the incidence rate was twice as great as in the non-bed sharers for ages 15 to 35 years. Here the family stock was the same. But over 35 years of age, when husband or wife as bed sharer was of different family stock, this increased incidence rate did not hold true. (Conjugal incidence rate 10 per cent.)

Pearl² calls attention to the early low mortality rate from tuberculosis among pioneers. They were usually of healthy stock. Later, as the country was settled, less virile stocks arrived, the death rate rose, reached a peak and then subsided. This was illustrated in the settlement of British Columbia and Saskatchewan, when compared to older Ontario. In this respect Long⁷ writes of the studies of Ferguson on the Indians of the Canadian Plains. About the year 1880 these Indians were transferred to reservations. Soon after this tuberculosis appeared and reached epidemic proportions in 1884. In the Q'Appelle Valley it reached 9,000 per 100,000. Within less than a decade a great drop in the rate occurred followed by a slower drop. Survival occurred in those resistant to the white man's diseases in general.

Drolet,⁸ in 1924, published an analysis of 7,500 histories of tuberculous and non-tuberculous patients and found that there was a greater tendency to recovery when the patient was descended from tuberculous parents (26 per cent versus 12 per cent). Fewer from tuberculous parents contracted the disease (34 per cent versus 59 per cent). He thinks that the almost universal decline of tuberculosis has been in a measure due to an increasing immunity acquired by hereditary evolution.

FACTORS IN HEREDITY

Stocks⁹ writes that most opponents of heredity agree to the following factors in connection with the development of tuberculosis: First,

that individuals vary in their resistance to the disease; second, that when resistance is very great the individual remains unscathed, when the resistance is moderate the individual remains unscathed to moderate doses of tubercle bacilli and may develop slight lesions of a non-clinical nature upon infection with larger doses. Those with slight resistance develop a chronic form of disease and those with poor resistance rapidly succumb. In the third place, most will agree that each individual is born with the capacity to resist which may within limits be enhanced or diminished by the subsequent state of health. The capacity for resistance with which any individual is endowed being hereditary or not is the point of doubt. Stocks examined the family records of some 4,000 tuberculous persons in Belfast and found that the fathers and mothers of tuberculous patients were subject to a higher rate of tuberculosis than the general population of parents. The children of tuberculous parents were subject to higher rates than the general population of children. This excessive rate in children was much more pronounced when both parents were tuberculous and when the mother was affected.

The facts, Stocks says, could be explained by infection alone but it can be shown that whereas in the latter case the contingency coefficients between pairs of children would be independent of the condition of their parents or antecedents, this would not be the case if susceptibility to infection be inherited as a quantitative factor. Dividing the families into groups according to whether or not tuberculosis was present in the parents or antecedents, it was found that the contingency and correlation coefficients for pairs of children increase with increasing tuberculosis in the antecedents. This result is to be expected on the theory of inheritance but is not explainable if susceptibility is independent of the antecedents.

Hill,¹⁰ from epidemiologic studies, believes that the first meeting with tubercle bacilli weeds out the susceptibles in early life, when there is no progeny, then gradually postpones the age at which fatal disease develops to and beyond the reproduction age, when susceptibles may be born again.

Schrempf¹¹ denies the influence of heredity

on pulmonary tuberculosis. He studied 129 infants, 185 pre-school children, 7214 school children and 2384 adults. He thinks the gravity of the course of any primary infection is determined purely by the massiveness of infection.

Bruneck¹² believes that an inferiority of a single or several organs is frequent and inherited.

Hamburger¹³ believes that a predisposition is a more important factor than frequency of exposure. Children associating with a severely infectious relative do not get infected more frequently than those who associate with a moderately infectious relative. He saw a one year old healthy child playing only once for a few minutes with a tuberculous person. The child died three months later from tuberculous meningitis. Liebermeister¹⁴ admits an inherited non-specific lowering of resistance to all diseases. Dickinson¹⁵ states that those with a parental history of disease die at a relatively earlier age than those without.

RACIAL FACTORS

That ancestry or racial factors do play a part in the development and course of disease is plainly evident from numerous observations. Thus Goodale¹⁶ found that in Syrians and Armenians at the Beirut Hospital, non-pulmonary tuberculosis predominated over pulmonary 732 to 412; more males were affected than females; bones and joints were most often involved, the spine most often. These findings he thinks would indicate dissemination due to lack of resistance.

Drolet⁸ quotes the death rate in New York City for the period 1918 to 1921 as being highest for negroes, 398 per 100,000; Finns 342, Irish 306, Norwegians 249, Greeks 228, Swiss 217, Swedish 202, Scotch 181, Austro-Hungarians 165, English 136, Germans 133, French 130, Italians 122, Americans 108, Roumanians 92, Russian Jews 86. Pearl mentions death rates under the same environment in Pennsylvania for Italian males 81.5, Irish males 342.18; Italian females 102.2 and Irish females 201.2 per 100,000.

Apparently the different nationalities are alike susceptible to infections. Chadwick and Zacks¹⁷ state that English, Italians, Russians, Poles, Americans, Irish, Canadians, Teutons,

Scandinavians and Latins react to the skin test alike; non-contact reactors 22 to 27 per cent and contact 24 to 32 per cent.

Lee¹⁸ found the ratio of tuberculous mortality in whites and negroes varied in different age groups between one to two and one to five. In white children tuberculous meningitis mortality exceeds that from pulmonary tuberculosis while in the negro race pulmonary tuberculosis mortality exceeds all other forms in all age groups, and childhood mortality as compared to adult mortality in negroes exceeds that in whites.

Opie, McPhedran and Putnam¹⁹ studied tuberculosis in whites and negroes in Philadelphia and came to the following conclusions: In white persons one in 20 of those in household contact with tuberculosis first exposed between birth and 14 years of age, has acquired the disease, and in those exposed after 15 years more than one in 10 have acquired tuberculosis; the danger of household contact is greater in adults than in children. In negro persons a larger proportion of those exposed has acquired the disease, and its frequency has increased with age at the beginning of exposure, being one in 12 of those first exposed between birth and nine years; one in nine of those between 10 and 14 years; and one in seven of those after 15 years of age. The enumeration of person years of illness, by a method similar to that used in the construction of life tables, furnishes a means by which the relation of existing tuberculosis to deaths from the disease in any given year may be determined for persons under observation in an out-patient clinic for tuberculosis. In white persons under the care of an out-patient clinic the ratio of existing cases of clinically manifest tuberculosis to deaths has been 12:2 and in persons of negro race, 4:3. In white persons the ratio of existing cases of tuberculosis with demonstrable tubercle bacilli in the sputum to annual deaths has been 3:8, and in negro persons, 2:1; approximately one-third of existing cases of clinically manifest tuberculosis in white persons have tubercle bacilli in the sputum, and one-half in negro persons. The ratios of existing asymptomatic or latent lesions to deaths in any year in households with tuberculosis may be determined with considerable exactness when roentgenographic examinations of the chest are made each year. Race, economic status and other factors

may modify morbidity and mortality ratios and the procedure that has been described provides a means by which these differences may be measured.

Ukil,²⁰ in 1931, studied mortality figures for Calcutta. He found a low death rate in the earlier years, reaching 4 per cent by the fifteenth year and its peak at 30 years, gradually sinking to 7 per cent at 60 years. An initial peak, similar to that occurring in England and Wales, was lacking. At ages 15 to 20 years five girls die for every boy. Latent or obsolete lesions at autopsy of all war casualties were far more common among the British than the Indians.

ANIMAL EXPERIMENTS

Hereditary influences have been demonstrated experimentally in animals. Long⁷ mentions Lewis and White showing wide hereditary variability in the resistance of different stocks of guinea pigs, and that Lurie with inbred rabbits of different racial ancestry showed low, intermediate and high resistance to inhalation infection while in cages. One group contracted the disease soon after exposure and died of generalized tuberculosis. Another group was slow to get the disease and finally died of a chronic type. There was also an intermediate group. Lewis and Loomis²¹ showed that allergic irritability in guinea pigs was one of the several inheritable characters which form a partial basis for the natural resistance to tuberculosis. (Capacity to produce hemolytic antibodies for beef and sheep corpuscles, agglutinins for *Bacillus typhosus* and *Bacillus abortus*, differed by families.)

Krause²² says the ability to react to foreign irritation is congenital to some extent as is shown by the work of Maud Slye, who successfully bred mice to produce a cancerous race.

Park²³ thought he detected passive transfer to immunity in that only four, or 13.2 per cent, of the offspring of vaccinated guinea pigs died of tuberculosis when periodically exposed to contact in others, whereas 27, or 71 per cent, of the offspring of the non-vaccinated died of tuberculosis under the same circumstances.

From his long years of experience in the animal experimental field, Theobald Smith²⁴ says that the primary resistance of the host is due to forces inherent in the system. According to the

amount present on the one hand, and the dose and virulence of the attacker, the resistance forces are gradually used up and replaced. The foundation of immunity resides in natural, inherited or genetic tendencies.

Local resistance or susceptibility seems also to be influenced by heredity. In his experimental work Bruno Lange²⁵ noticed that some animals inhaling the smallest number of bacilli have the greater pathologic changes. In guinea pigs and sheep the lymph node lesions are more marked, in rabbits the lung lesion. The differences were not accountable on the basis of allergy, in his estimation.

LOCATION OF LESIONS

In another contribution Bruno Lange²⁶ showed that the development and organ location of disease was not entirely dependent upon a filtering action. He says that guinea pigs may show many tubercles in the spleen and liver after intravenous inoculation while few are found in the lung; the lymph nodes near the liver and bronchi were markedly involved. He further states that the spleen has been shown to be most involved with small doses, by Uchida, Bunzema, Corper and Lurie, next the tracheobronchial nodes, the lungs and finally the liver. In rabbits the lungs are much affected with average doses but with small doses, bovine type, the bronchial nodes may be uninvolved, the kidneys much so, the spleen less. When low virulent bovine type is used the spleen and liver may not be involved, although the lungs are much involved. With the human type only lung foci are found. In cattle or sheep, bovine usually causes mostly lung, tracheobronchial and mediastinal node disease. In mice, pulmonary disease results almost entirely from either bovine or human type infection.

Cobbett²⁷ would explain the differences in amount and appearances of tuberculosis in the various organs of various species as being due to a chemical toxin which holds the tubercle bacilli locally, or to a demand of the organs for food similar to the substances contained in the tubercle bacillus.

Corper and Lurie²⁸ demonstrated that in non-resistant animals such as the guinea pig and monkey, the quantitative distribution of tubercle bacilli was of importance for the subsequent in-

volvement of the organs. But in more resistant animals such as rabbits and dogs, this was not true. Thus in the rabbit the liver contains more bacilli than the lungs, but has less tuberculosis, and in the dog the spleen has most bacilli and least disease. But even in monkeys and guinea pigs this local resistance holds true to a minor extent. Variations in organ resistance as found by them are as follows: In the rabbit the lung is most commonly infected with either human or bovine, the liver usually escapes; and bovine infection usually causes generalized disease, human almost only lung disease. The guinea pig is highly susceptible to both strains of bacilli and the spleen suffers most. The dog is infected only with difficulty by either bovine or human strains. The lesions are usually confined to the lung and pleura, liver, kidneys and abdominal lymph nodes. The spleen is almost exempt. The monkey is very susceptible to human and bovine. Generalized disease is common but the lungs are perhaps most involved.

Krause²⁹ says that the native tissue peculiarities bestowed by inheritance are operable in the course of disease. Animals immune to tuberculosis can be infected with minimal doses. Acute disease is due to allergy, large or repeated infections. Environment, mind and food play an important part.

SEX

Another factor, hereditary in character but probably acting biologically independent of heredity, is sex. Sex and race modify the frequency and severity of infection, according to Opie et al.³⁰ Girls react to tuberculin more often than boys, aged 10 to 15 years, and childhood lesions are more frequent in girls. From ages 12 to 20 years parenchymal lesions are twice as frequent in girls and more advanced. A higher mortality for girls at this age from 1870 to 1920 was found by Putnam, according to Opie, in every decade period. Sex must be the underlying factor.

Lee¹⁸ also found the mortality rate for adult females declining for 20 years at a greater rate than that for males. At the same time the rates for children under five years of age have fallen 95 per cent since 1865. The reduction in infection in young adult females, the mother group,

has been a great factor in reducing infection in children. This in turn results in reduction of infection in the mothers a generation away. If the trends for males and females during the last 50 years had been interchanged, the general tuberculosis rate for today would probably have been double what it is. Such a condition prevails more or less in Ireland and Switzerland where male and female rates have always been high and equal.

SPECIFIC RESISTANCE

In addition one must consider the influence of specific resistance on the occurrence of disease, the actuality and value of which have been so much questioned recently.

Krause²², speaking of specific resistance, says that the development of anatomic tubercle endows the body with power to resist greatly increased numbers of tubercle bacilli. This manifests itself with the establishment of first foci. Up to a certain point this resistance is proportionate to the extent and severity of the initial dose. With the healing of diseased foci, resistance diminishes. If the animal remains tuberculous, the increased power to resist is probably never entirely lost nor does the resistance sink to the level before the animals were first infected.

Specific resistance is reduced at the site of an inflammatory tuberculin reaction for at least four days, according to Krause and Willis³¹. This is more evident when the reaction is in the line of drainage of a tuberculous focus.

However, Corper³² could not reduce resistance with turpentine, croton oil, cantharidin or capsicum. Whatever doubt there may be as to the effectiveness of specific resistance in the minds of some, the experimental work of 50 years will need a tremendous amount of disproof to dispel the idea of its presence and to discount its aid, even though slight, in overcoming renewed infection.

MODE OF LIFE

Environmental and nutritional factors and the mode of life undoubtedly play a very important part in the incidence and course of tuberculosis. Lee¹⁸ found that the tuberculosis mortality rates increased in Massachusetts during the World War period, 1914-1918. That for the males increased in about 1915 and for

the females in about 1917. By 1929 the rate for females had returned to the pre-war trend except for ages 15 to 29 years, in which group the decline was at a slower rate. In New York the rate was raised but little in male age groups, except perhaps for ages 15 to 29 years, but for females aged 15 to 25 years there was a marked rise. The latter rise perhaps may be explained on an industrial basis.

Lee³³ also showed an increase in mortality rates in Germany due to the World War which declined after the Armistice. When inflation occurred the rate rose and then again fell. Environmental factors were at work, such as increased industry and lack of food. In the United States there was a rise in mortality rate in industrial places but not in non-industrial regions.

SUMMARY

Many forces have been and are at work which contribute to the prevalence and mortality of tuberculosis. Which contributes most must for the present remain unanswered. Of heredity it might be said that the largest factor is that all kinds of inborn characters, normal or abnormal, bodily or mental, important or trivial, structural or functional, except complete sterility, may be continued in the new generation. That one does not always see the total of inheritance may be due to the lack of proper stimuli to develop the latent factors. The story of environment has not been told in full as yet; nor has the book of knowledge of nutrition closed, the work complete. But it may be said without contradiction that where there are no tubercle bacilli there will be no tuberculosis. For there must be infection before there can be disease.

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UNDULANT FEVER WITH ENDOCARDITIS AND MYCOTIC ANEURYSM*

A CASE REPORT

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Brucellosis, or undulant fever, has come to be recognized within recent years as a widespread condition, and one of frequent occurrence. Much has been learned concerning the etiology, and diagnosis, and progress is being made in the direction of specific therapy. Our knowledge of the pathology of the disease continues to be limited due to the low mortality rate. Complications involving various unrelated systems of the body are being observed, and from these it is apparent that brucellosis is a serious menace to health and does at time endanger life itself.

CASE REPORT

The following case is presented because of the unusual nature of its complications.

M. R., a white male, 40 years of age, was first seen on November 15, 1937, with a chief complaint of fever. The onset of illness dated back three months, at which time afternoon elevation of temperature was noted. Later, fever was present in the forenoons also, and for the month previous to admission to the hospital there were few occasions when the temperature was normal. For several weeks the patient remained up and continued his occupation of farming with his interests particularly directed toward cattle and live stock. About November first he was forced to abandon his work because of the fever, markedly increased malaise, and weakness. From that time until his admission to the hospital he had remained in bed at home, with resultant diminution of fever. There was no

improvement in his subjective symptoms, and he came to us seeking diagnosis.

The family history was non-contributory, and there had been no serious illness in the past. Venereal infection was denied. Laparotomy had been done twenty years before because of appendicitis with perforation. The patient is married, and his wife and one child are healthy. There were no other pregnancies.

Examination revealed a large individual, not apparently seriously ill, and exhibiting a fairly good state of nutrition. The temperature at this time was normal. Eyes, ears, nose, and throat were negative for pathological findings of importance. Respiration was not labored nor increased, and there was no cough. Percussion over the lung fields elicited a normal resonant note, and there were no rales. The heart was thought to be slightly enlarged to the left. The rate was 80 per minute, and the rhythm regular. There was a distinct but soft systolic murmur over the mitral valve area, which was not transmitted. The sounds were otherwise of good quality. The blood pressure was found to be 117/70. The abdomen was flat, and presented no tenderness nor rigidity. The liver was palpable just below the costal margin, and the spleen was felt with difficulty on deep inspiration. The external genitalia and extremities were normal, and rectal examination revealed no pathology.

Laboratory examinations revealed the following findings: Erythrocyte count 4,900,000 per cu. mm., hemoglobin 90 per cent, leukocyte count 3,800 per cu. mm., with neutrophils 61 per cent, large lymphocytes 12 per cent and small lymphocytes 27 per cent. Repeated two days later the leukocyte count was 4,500, with only 22 per cent neutrophils and 64 per cent small lymphocytes. No malaria plasmodia were found. Wassermann and Kahn tests gave negative results. Widal tests gave no agglutination for typhoid or paratyphoid organisms, and blood culture was negative. Agglutination tests for *B. abortus* and *B. melitensis* were positive in dilutions of 1-100. Urinalysis revealed a trace of albumin, a few pus cells and a few red blood cells.

The patient remained in the hospital only three days during which time the daily rise of temperature was never above 101 degrees. Two features were outstanding, namely, the marked mental depression, and the very profuse sweats. The latter occurred at any time when the patient was sleeping, and surpassed any similar condition I have ever noted in any individual.

Returning home for treatment, fairly satisfactory progress was made, although the fever continued to be present every day, and at times reached 102 degrees. On December ninth the patient was re-admitted to the hospital. It was learned that for one or two days there had been

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soreness in the right arm. In the early morning of the day of admission there had been sudden, severe pain in the right arm. This was associated with coldness and pallor of the extremity, and it was found that the radial pulse was not present. Artificial heat was applied, color and warmth returned, but there was no return of the pulse.

Examination of the arm confirmed the history, in that temperature and color were approximately normal, but no radial pulse could be detected. Further, the blood pressure in the right arm was 0/0 whereas in the left arm it was 140/70. There was no limitation of motion, and no loss of motor power, but the arm continued to be painful.

The heart was definitely enlarged at this time, and it was not at all difficult to hear diastolic as well as systolic murmurs over both the mitral and aortic areas. The latter diastolic murmur was transmitted down the left sternal margin. In addition, both the liver and spleen were larger than on the previous admission, and the liver was slightly tender. Other findings were unchanged. The leukocyte count was 7,800, with neutrophils 40 per cent, small lymphocytes 56 per cent and large lymphocytes 4 per cent. Blood culture taken at this time remained sterile after thirteen days. Urinalysis revealed one plus red blood cells and a few hyaline casts.

DISCUSSION

With these findings there was no doubt that the patient had suffered occlusion of the axillary artery. It was also evident that there was a progressive endocarditis, involving both the mitral and aortic valves. This condition exists as an infrequent, but not rare, complication of undulant fever. The arterial occlusion was no doubt secondary to an embolus which lodged at this point, resulting in continued thrombosis to the point of complete obliteration of the arterial lumen. It has been suggested that an independent endarteritis might have been the causative factor for thrombosis, but with the known endocardial lesions embolic phenomena might well be expected, and to my mind seems more probable. There has been no other recognizable embolus, unless the presence of the few blood cells in every specimen of urine indicates minute renal emboli.

CONTINUATION OF HISTORY

Following the vascular accident conservative treatment was maintained, as collateral circulation was apparently well established. The patient remained in the hospital until December 23, and during the latter days of this period the temperature did not exceed 100 degrees. Drenching sweats

continued despite all efforts to prevent them, and the outlook on life was markedly depressed. At the time of discharge from the hospital definite improvement in all respects had been noted, and it was felt that recovery would soon follow.

The patient returned to the hospital for the third time on January 4, 1938, complaining of increased pain and numbness in the right arm and hand. Physical and laboratory findings were much the same as on the last examination, except that a definite tumefaction was noted just below the outer third of the right clavicle. On palpation it was found that following each cardiac contraction there was an expansile pulsation of the tumor mass. This could also be felt in the right axilla. A bruit could be heard over the mass with each pulsation. The radial pulse could now be palpated, although the volume was small, but after several days this again disappeared. A diagnosis was made of mycotic aneurysm of the right axillary artery.

In general the patient made satisfactory progress. The temperature subsided so that only occasionally it exceeded normal. The sweats became much less severe. A morbilliform rash which had been very troublesome cleared up to a large extent. The aneurysm, however, continued steadily to enlarge until it was feared that rupture might occur. With the improved general condition and the obvious collateral circulation, surgical intervention was advised.

On February 14, 1938, with nitrous oxide-oxygen anesthesia, operation was performed by Dr. J. C. Willis, Jr. An incision was made parallel to and below the right clavicle, and extended into the axilla. The aneurysm was exposed with some difficulty, and was found to involve the proximal portion of the axillary and the distal portion of



Fig. 1. Showing exposed aneurysm at operation

the subclavian arteries. The axillary artery had no pulsations. The aneurysm itself was approximately 6 cm. in diameter, and 8 cm. in length. The vessels proximal and distal to the aneurysm were doubly ligated with braided silk, and the sac left in situ. It is expected that this will undergo organization and fibrosis.

The first few postoperative days presented a flare up of temperature, reading as high as 104, but this gradually decreased, and now after three weeks the patient is again afebrile. The wound is healed except at two points where there was drainage with rubber tissue. The general condition is quite satisfactory, but endocardial lesions persist as manifested by the presence of a systolic mitral murmur and both systolic and diastolic aortic murmurs.

SUMMARY

A case of chronic undulant fever is presented. This case is unusual in that several features and complications are noted which are infrequently seen. These include a morbilliform rash, endocardial lesions with aortic regurgitation, occlusion by embolus of the right axillary artery, with subsequent development of a mycotic aneurysm at this site. It is thought that this last named complication has not been observed previously. Ligation of the vessels entering and leaving the aneurysm was done, and convalescence has been satisfactory. Prognosis for the future is guarded because of the presence of valvular incompetence.

REPORT OF THE PASTEUR INSTITUTE OF THE CHARITY HOSPITAL OF LOUISIANA AT NEW ORLEANS FOR THE YEAR 1937

RIGNEY D'AUNOY, M. D.†
and

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During the year 1937, the Pasteur Institute of the Charity Hospital administered antirabic prophylactic treatment with material prepared as generally indicated by Semple.* Each injection consisted of a 2 mil portion of 4 per cent

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*For the method of production of virus, see Report of the Pasteur Institute for 1931-32, New Orleans M. & S. J., 86: 236, 1932.

killed virus-emulsion, except in the case of children under three years of age, to whom a 1 mil portion of vaccine was given at each treatment.

INJURIES BY PROVEN RABID ANIMALS

Head Injuries: Injections were made twice daily for the first seven days, and once daily thereafter for fourteen days.

Injuries to Trunk and Extremities: If multiple and severe, the same treatment was used as for head injuries.

If slight and treatment was begun within six days after injury, treatments were continued for fifteen days, with one injection daily.

If slight and treatment was begun more than six days after injury, treatments were continued for eighteen days, with one injection daily.

INJURIES BY UNLOCATED ANIMALS

If the injury was received under suspicious circumstances, the same type of treatment was used for a similar type of injury by proven rabid animals. If there were no suspicious circumstances, treatment was given over a period of fourteen days, with one injection daily.

NO ACTUAL INJURY

If rabid or suspected animals had been handled, treatment was given over a period of eighteen days, with one injection daily.

TREATED CASES

Thirteen hundred and forty-two cases were treated during 1937. This was over 100 more than were treated for the past entire five year period (January 1932—January 1937). They are classified as follows, according to the suggestion of the International Rabies Conference of the League of Nations, in order that the statistics of various institutions may be compared.

A. Cases in which the animal proved to be rabid (by microscopic and biologic test).

B. Cases in which the animal was diagnosed clinically as rabid.

C. Cases in which the animal was only suspected to be rabid (strayed, destroyed, or in such a condition when received that the brain was unfit for examination).

D. Cases in which the animal was alive and well after an observation period of three weeks, or whose brain was found to be negative when examined after the observation period.

E. Cases in which the patients received treatment without actually having been bitten (patients who handled rabid or suspected animals).

Table I records the number of treated cases in each category and classifies the types of injury.

TABLE I

Location of Injury	A	B	C	D	E	Total
Head	29	1	48	0	0	78
Body	23	2	15	0	0	40
Superior extremities...	241	0	127	0	257	625
Inferior extremities...	322	1	210	0	0	533
Multiple sites.....	29	7	30	0	0	66
Total.....	644	11	430	0	257	1342

Table II gives the age, sex and race of the patients.

TABLE II

Age	White		Colored		Total
	Male	Female	Male	Female	
Under 1 year.....	2	1	0	0	3
1—2 years.....	13	10	2	4	29
3—4 years.....	26	25	10	12	73
5—9 years.....	147	110	30	28	315
10—19 years.....	187	134	51	28	400
20—29 years.....	98	86	32	22	238
30—39 years.....	50	30	24	16	120
40—49 years.....	36	12	20	15	83
50—59 years.....	18	5	15	5	83
60—69 years.....	14	4	6	3	27
70—79 years.....	5	4	0	0	9
80 years and over.....	1	0	0	1	2
Total.....	597	421	190	134	1342

Table III records the geographical distribution of the patients of Louisiana.

TABLE III
Parishes

Avoyelles	11
East Baton Rouge.....	4
Iberville	1
Jefferson	36
Lafourche	1
Orleans	1225
Pointe Coupee.....	1
Rapides	1
St. Bernard	7
St. Charles.....	5
St. James	10
St. Mary	9
St. Tammany.....	8
Tangipahoa	11
Washington	12
Total.....	1342

Table IV gives the number of days elapsing between the time of injury or exposure and the beginning of treatment, when such information could be obtained.

TABLE IV

Days	Patients
1	290
2	227
3	189
4	171
5	105
6	87
7	50
8	46
9	28
10	19
11	12
12	8
13	9
14	4
15	5
16	1
17	2
18	1
19	0
20	2
21	2
22	0
23	0
24	0
25	0
Over 25 days	1
Unable to get information	83
Total	1342

Table V indicates the circumstances of the injury and the type of first aid treatment given in each case.

TABLE V

Injury inflicted through clothing.....	182
Injury inflicted to bare skin.....	1260
Iodine applied to site of injury.....	8
No local treatment.....	675
Phenol, cauterization and serum.....	13
Tetanus antitoxin only.....	1321

Table VI indicates the number of animal brains examined and their diagnoses. The total number exceeds that for the entire previous four year period.

TABLE VI

Negative	261
Positive	515
Unfit for examination.....	24
Total.....	800

COMPLICATIONS

During the course of the 1,342 treatments there were three complicating incidents.

1. Subcutaneous abscess in abdominal wall at site of an injection.

2. A case of non-protection in a colored male, 34 years of age, in whom treatment was given irregularly due to poor cooperation.

3. A case of meningo-encephalitis occurring on the fifteenth day after the beginning of treatment, and three days before completion of treatment. Patient had been injured by a suspicious dog.

CESAREAN SECTION*

A SYMPOSIUM

HISTORY OF CESAREAN SECTION

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The first cesarean section is mythically associated with the birth of Julius Caesar, somewhere between 100 and 44 years B. C.; even Dorland's dictionary makes this claim. That this impression is erroneous is evidenced by letters written by Caesar to his mother during the Gallic Wars. The operation was known as early as 762-715 B. C., as Numa Pompilius, the second King of Rome, formulated the Lex Regia, which forbid the burying of any woman before the excision of her offspring. This law persisted to Caesar's time and became known as the Lex Caesarea, which possibly explains our general opinion and the origin of the term cesarean section.¹

Stander states,¹ "according to Rigby, the old-

est authentic record of a living child born by cesarean section, is that of Georgius, a celebrated orator born at Leontium, in Sicily, 508 B. C. The earliest account of this operation in any medical book is found in the "Chirurgia Guidonis de Caulico," published about the middle of the fourteenth century, but reference is made only to the fact that it is a proper procedure after death of the mother. That the operation had been performed on the living mother at a much earlier period is presumed from the writings in the Mischnejoth which is supposed to have been published in 140 B. C. or earlier. In this we read: "In the case of twins, neither the first child which shall be brought into the world by the cut in the abdomen, nor the second, can receive the right of primogeniture, either as regards the office of the priest or succession to property."¹

Trautman, of Wittenberg, however, is generally credited with having done the first modern operation in 1610 A. D., on a case of herniated uterus. In the earliest period, cesarean section was usually done after death, and was undoubtedly sanctioned by the Roman Catholic Church, thus insuring the child the rite of baptism.

The term cesarean section first appeared in the literature in 1637 A. D. in the work of the Jesuit Theophile Raynaud. In this country until 1878, gastrohysterotomy was the name given to the operation, which in itself is not absolutely accurate, but better laparohysterotomy.

With the period of 1600-1876, begins our knowledge of the operation. It was during this time that it became more commonly used on live women. The mortality was very high due to infection and hemorrhage. It is interesting that probably the first cesarean section in the United States was done in Louisiana, in Donaldsonville, Ascension Parish, by Francois Marie Prevost,² a Frenchman, who took up his abode in this state in 1799, after the insurrection in France. In 1879, H. P. Harris,³ an early statistician and obstetrician, collected 19 cases done in Louisiana prior to 1870, with five maternal deaths. Eighteen of these operations were on

*Read before the Orleans Parish Medical Society at a meeting held jointly with the New Orleans Gynecological and Obstetrical Society, October 25, 1937. The first five papers in the symposium appear in this issue of the Journal, the last five in the June number.

slaves, and a deformed pelvis, generally rachitic, was the chief indication. Harris later, in a survey of sections done in the United States, reported 60 operations with 28 maternal and 27 fetal deaths. Most of these cases were in women who had been in labor for many hours, and in some cases attempts at delivery (versions, craniotomies, evicerations) had been made by plantation midwives before the operation was done.

The first attempts at low section were made on cases such as those gathered by Harris, for in 1805, we find Osiander pushing up on the head per vaginum to mark the site of his projected incision, and in 1821, Ritgen attempting an extraperitoneal cesarean by means of an incision parallel to Plupart's ligament. In 1823, Baudelocque of France, and in 1824, Physick of Philadelphia, each proposed incisions in the lower uterine segment.

The period of 1876-1882, was one of more refinement. The Italian Eduardo Porro, Professor in Pavia and Milan Universities, first suggested the subtotal hysterectomy following cesarean section. However, he probably did not appreciate its real value, since the work of Lister and Pasteur was not widely known. The mortality rate dropped to 24.8 per cent with Porro's technic. The chief drawback to this era, however, was that all uteri were sacrificed.

Prior to 1882, most uterine wounds were left unsutured, but Sanger changed the attitude of the profession by the introduction of suturing the uterine incision, in an effort to control hemorrhage. The Porro operation was then restricted to patients who were infected or in whom it was apparent that the uterus was diseased. The step made by Sanger cannot be over estimated, for to him goes most of the credit for the conservative operation that we know today.

In 1907, Frank of Cologne, reported 13 operations without a death by an improved low section. He made an effort to seal the abdomen by uniting the upper uterine and lower vesical peritoneal flaps to the upper and lower edges of the parietal peritoneum of a transverse abdominal incision. Kronig, a few years later,

suggested that it was not the sealing process that saved lives, but the location of the uterine incision followed by the covering of it with peritoneum. Beck, in 1919, improved the operation still further by overlapping the upper with the lower peritoneal flap, while in 1926, Munro Kerr proposed the curved transverse incision into the lower uterine segment with the convexity downward to avoid hemorrhage that is usually seen in the vertical type.

A further modification of cesarean section occurred in 1924, when Portes, of Paris, introduced a new method to be used in infected patients. In his operation the abdomen is opened and the uterus delivered to the outside. The parietal peritoneum is closed, anchoring it to the uterus, while the lower peritoneal angle is stitched to the cervix. The uterus is then opened, baby and placenta delivered, followed by closure of the uterine wound. The uterus is dressed with moist dressings and allowed to involute. When this has occurred, the abdomen is reopened and the uterus is returned to its normal habitat. Pregnancy has been reported in several cases cesareanized by this method.

CONCLUSION

Conceived in superstition and first practiced on dead women, this operation has enjoyed slow, continued, but certain evolution, until now a fuller knowledge of its limitations, indications, and modifications is ours. No small part of its recent advancement is due to the New Orleans Obstetrical and Gynecological Society for in 1937 was published the first composite record of cesarean sections done in New Orleans hospitals. This was the beginning of such statistical studies in the larger clinics throughout the country. Tonight is being reported the second such survey in New Orleans. With the points outlined in this brief historical review in mind, it is hoped that the remainder of this program will be of interest to all, whatever the line of endeavor.

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AN ANATOMIC CONSIDERATION OF DYSTOCIA

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In the brief period allotted for discussion of the anatomic background of dystocia neither a complete nor a critical review can be attempted. Their mechanisms being so obvious, instances in which the source of dystocia is the fetus itself—from oversize, hydrocephalus, interlocking of twins and the like—must be disposed of with bare mention. Likewise a share of the cases in which the seat of difficulty is maternal may be passed by, if they involve such direct explanations as the occurrence of malformation, disease or trauma of the soft parts. But special interest attaches to the bony pelvis, both because of the frequency with which it is concerned in the causation of dystocia and on account of the varying points of view from which its obstetric limitations may be considered.

The bony pelvis shares with other body structures the inherent biologic tendency to be variable; pelves vary in absolute dimensions, proportions and modeling just as do faces, ears or any other part. The pelvis is further subject to more profound structural aberrations, arising from faults of development, trauma and disease. To set limits of the normal in obstetric terms, we may follow Jarcho in this definition: "Obstetrically the normal female pelvis may be defined as one that permits the delivery of an average sized child without unduly difficult labor." The abnormal pelvis is therefore at once defined by exclusion, yet the existence of numerous attempts to classify its heterogeneous types bears witness to the difficulty of arriving at a generally acceptable systematic organization of these types.

The current systems of classification which introduce the etiologic factors for obstetric pelvic inadequacy would seem to be rendered more sound if adapted with a view to the pelves of both sexes, with major divisions applicable to male and female and subsidiary divisions planned for descriptive and pelvimetric characterizations of the types from the strictly obstetric standpoint. Two main classes might be suggested: (1) Pelves which are definitely pathological. Here would be placed all in-

stances, under the desired subclassification, of primary developmental malformations such as the Naegele pelvis and assimilation, the irregularly contracted pelves developed secondarily as a result of disease of the spinal column, hip-joint disease, traumatized, rachitic, osteomalacic pelves and the like; (2) pelves which are free of pathology. Under this heading, again ordered after a chosen descriptive or pelvimetric system, would be included variations of obstetric significance, departures from the obstetrically favorable gynecoid standards of form and dimension.

The etiology of pelvic variations of the second class calls for mention. Some endocrinopathies and hormonal variations fluctuating even within normal range affect pelvic development. The growing skeleton is regulated to some extent through the mechanical stimulations of pressure and muscle stress; certain occupations and some forms of exercise if excessive are capable of so altering the pelvis as to render it abnormal, in the sense of obstetric definition.

THE INDICATIONS FOR CESAREAN SECTION

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Perhaps the most spectacular of all obstetric operations is cesarean section. Likewise, it is one of the simplest to perform, and as a result offers an easy mode of escape to either the untrained obstetrician or to the timid one.

Since the actual technic of the doing of the cesarean is a relatively easy one to master, it remains for those of us who practice and teach obstetrics as a true art, to impress upon the profession that it is an operation to be done only for certain indications, and when certain conditions are fulfilled.

Indications for cesarean section average about three per cent of all maternity cases. (On my service at the Touro Infirmary, the incidence is 2.5 per cent.) Surely the chief indication for this operation is in contracted pelvis, wherein the disproportion between the baby

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and the maternal pelvis is either real or relative. In our own large series of cases, this group accounts for about 64 per cent of the total.

The next most important indication for cesarean section is in ante-partal hemorrhage, due either to placenta previa, or to premature separation of the normally implanted placenta. However, in the experience of many, the above indications are subject to certain qualifications. I am convinced that it is the operation of choice in all cases of central placenta previa, particularly in all primipara, and in multipara wherein the cervix is less than half dilated. In partial placenta previa, however, particularly in multipara, and depending upon the amount of the dilatation and the general condition of the patient, other methods of attack, such as bags or packs, may be employed. However, one can see at present a great drift to section as the treatment of choice in placenta previa, especially when one is convinced of the viability of the child.

As regards the use of cesarean section in cases of premature separation of the placenta, I am firmly of the opinion that it is the operation of choice, particularly if there is scant dilatation of the cervix. It must be done for the above conditions, even though the baby be dead, for one must get in and stop the hemorrhage, and perchance in rare cases, be ready to remove a uterus riddled with intramuscular hemorrhage.

Next in line of frequency as an indication for section, are the toxemias of pregnancy. Let me say right here, however that I am not advocating the procedure for true cases of eclampsia, as I am positive that it will only tend to increase the maternal mortality. It has, however, a very definite indication, particularly in primipara with an increasing depth of toxicity in spite of all recognized treatment over a period of several days, or in the cases of so-called fulminating pre-eclampsia, before the onset of convulsive seizures. Surely it is preferable in the two above mentioned types, to use a bag with all its unpleasant and potentially dangerous sequelae.

Tumors, such as fibroids, ovarian cysts, and the bony exostoses of the pelvis, must be weighed as to their consequences in each particular case. Many is the time, that when the time of retraction takes place, the fibroid will rise, and give no trouble whatsoever.

At this point, we are confronted with what may be termed a debatable indication for cesarean section, namely the dictum of "Once a cesarean, always a cesarean". It goes without saying, that if the first section was done for a contracted pelvis, the subsequent deliveries must perforce be likewise. Also when sections are done for causes other than contracted pelvis, such as ante-partal hemorrhage or fulminating toxemia, and the convalescence has been febrile, one is fully justified in doing a repeat section. Eardly Holland gives the frequency of rupture of cesarean scars as 4 per cent, and the maternal mortality attributable to the rupture as 30 per cent. In the light of these figures and the attendant dangers, and with a personal mortality rate of 1.2 per cent in a series of 165 sections over a period of eighteen years, I am more than ever convinced, that "Once a section, always a section" is going to be my choice of procedure.

Where pregnancy complicates a cardiac condition, and it is desirable to give the patient as easy a delivery as possible, cesarean section must be considered. Nevertheless, before arriving at such a conclusion, one must always have the opinion of a competent cardiologist, for he alone can tell best of all just what the heart may be expected to stand.

SUMMARY

In such a brief communication as this, one can merely mention and touch but lightly upon the principle indications for cesarean section. However, I would find myself derelict if I were not to enter a plea for the utilization of this life-saving procedure wherein the proper indication arises and the proper conditions are fulfilled. I fear that many obstericians well qualified in its performance, are leaning over backwards due to the disrepute into which cesarean section has been brought by the ignorant and unthinking male midwife.

THE CONTRAINDICATIONS FOR CESAREAN SECTION

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Cesarean section is an operation which was designed to reduce maternal mortality. The incidence of this operation has increased but the mortality has not been lowered; therefore, it follows that somewhere in the train of events, factors have arisen which have been wrongly chosen. Can it be that there is extreme laxness in the recognition of the proper indications for this operation? Is there a failure to perform the procedure at the right time? Is poor judgment exercised in the selection of the appropriate type of cesarean section when the operation is indicated? Probably all of these causes unite to give the present high maternal mortality, but the lack of comprehension of the contraindications accounts for the greatest number of errors. Too often a purely surgical outlook is taken of an obstetric problem. The dictum of Hilton in the management of pent-up pus is being adopted as the rule for the release of the apparently pent-up baby. "Let it out" says the surgically wise but obstetrically foolish.

In contemplating this operation one should recall the immediate dangers of anesthesia, shock, hemorrhage, sepsis and post-cesarean pulmonary embolism, as well as the remote effects of rupture of the uterus in subsequent pregnancy, chronic intestinal obstruction from adhesions and hernia of the incisional or umbilical variety. The indications for operation would have to be outstanding to overcome these hazards and sequels.

Let us consider the contraindications of cesarean section with reference to the fetus. A child in serious danger or dead, a monster or a too premature infant should not be delivered by cesarean section unless the following conditions prevail: (a) an absolute pelvic indication; (b) premature separation of the placenta with a closed cervix; (c) in placenta previa centralis where the cervix is less than one half dilated. The method of craniotomy is often forgotten.

It is conceded that every case is an individual problem but the attending obstetrician's experi-

ence should be such that he will know in advance after thorough study of the case if a section is indicated. As guardian of an obstetric case, he will not allow labor to progress to the point where exhaustion and shock supervene and cesarean section is contraindicated; neither will he perform the procedure among surroundings which render aseptic cesarean section impossible. Under these circumstances craniotomy is the method of choice and it carries only one fifth the maternal mortality of section.

There are certain obstetric complications which were treated by abdominal delivery a decade ago but the mortality was so high that this method was relinquished. I refer to the operation of cesarean section in eclampsia and it was this class of case that helped New Orleans to acquire the mortality of 16.1 per cent at that time. It would be gratifying if eclampsia could be listed as a contraindication but there are few cases in which section is the best solution for mother and child and the operation is perhaps more useful in fulminating pre-eclampsia.

Sterilization per se is never an indication for cesarean section. The patient should be delivered normally and have the sterilization operation at a proper interval. Such motives as: wish of the family doctor, on demand of the patient, economic reasons, to preserve a normal pelvic outlet, a recent vaginal repair, repeated attacks of false labor, fetal distress should be relegated to Lethe.

Equally significant is the choice of the type of cesarean section to be performed. The classical cesarean section is contraindicated if: (a) the patient is infected; (b) has been long in labor, or (c) has been subjected to repeated vaginal examinations by those whose technic is questionable even though no signs of infection are apparent at the time. The classical section is utilized in cases of placenta previa, abruptio placenta and where speed is essential. If one is equally rapid in the cervical and classical cesarean section the latter should be abandoned. In frankly infected cases the Porro procedure is the only alternative.

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THE CHOICE OF OPERATION IN CESAREAN SECTION

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Cesarean section is a surgical procedure of major importance and is never without danger. While cesarean section may be simple technically, it is, nevertheless, a serious undertaking for the patient. Experience shows that the average mortality in all cases is about ten per cent. One of the greatest factors in the high maternal mortality is the injudicious and unwarranted abuse of cesarean section; another lesser factor is the improper selection of the type of operation when indicated.

Keen obstetrical and surgical judgment is required to determine conservatively when to operate and what type of operation to employ. The choice of operation depends mainly on the experience and ability of the operator. Every obstetrician aspiring to do surgical obstetrics must be familiar with five types of operation. He must know their limitations as well as their indications because upon his judgment in the selection of the proper operative procedure may lie the difference between life and death. This applies particularly to the mother.

THE FIVE TYPES OF OPERATION

(1) *Vaginal Cesarean Section*: This operation is reserved for patients who need a rapid evacuation of the uterus when the pregnancy is not too far advanced and is especially indicated when immediate delivery arises in gravida with a long, rigid, undilated cervix before the seventh month of gestation.

There are three absolute and cardinal requisites before this operation is attempted (Phan-

euf): (1) the tissue must not be edematous or friable; (2) the uterus must be movable so that the cervix may be readily brought down in the vagina; (3) the pelvis must be ample and the child not too large. The great advantage of this method is the extraperitoneal approach of the uterus. This gives greater safety than the abdominal approach.

(2) *Classical or Sanger Operation*: This is the original, conservative cesarean section and, in my estimation, the operation of choice in the hands of the occasional operator. Optimal results are obtained if this operation be restricted to only those cases in which the operation is done as an elective procedure; that is, before or soon after the onset of labor while the membranes are still intact or have recently ruptured, and to those patients in whom no vaginal examinations or manipulations have been attempted.

The advantages of this method are: (1) it is the simplest of all section technic; (2) it can be done more quickly than any other type of section.

The disadvantages are: (1) greater danger of peritonitis should infection be present in the uterus; (2) greater tendency toward postoperative adhesions, and complications; (3) uterine scar more liable to rupture in subsequent pregnancies and labors.

(3) *Kronig—DeLee—Low Flap Cesarean Section*: Time has proved that an incision placed in the lower uterine segment and isolated from the peritoneal cavity by the reflection of the bladder peritoneum results in definite protection from leakage and in more satisfactory healing.

This procedure is indicated in patients who have had an adequate test of labor, even though the membranes may be ruptured, provided there is no fever and no gross contamination through repeated vaginal examinations and attempts at delivery from below. In the hands of obstetricians of recognized ability, this operation has widened the field of cesarean section and has materially reduced the mortality and morbidity.

The advantages are: (1) diminished danger of peritonitis; (2) hemorrhage less because placental site is usually above line of incision; (3) abdominal adhesions are less by the low

situation of the incision and its more perfect peritonealization; (4) scar is stronger and rupture less apt to occur; (5) postoperative complications less severe.

(4) *Porro, or Cesarean Section Followed by Supravaginal Amputation of the Uterus*: In order to lessen the disastrous complications of sepsis and hemorrhage resulting from cesarean section in frankly infected cases, this operation was devised. The indications are: (1) severe sepsis in labor when vaginal delivery is undesirable or impossible; (2) presence of fibroid tumors complicating pregnancy rendering delivery by the natural processes impossible or dangerous; (3) severe and uncontrollable hemorrhage from placenta previa, ablatio placenta and uterine apoplexy; (4) placenta accreta, uncontrollable postpartal hemorrhage and rupture of the uterus.

The advantages are: (1) hysterectomy after section removes a potentially infected organ before local or systemic infection occurs or develops; (2) obvious, or extremely probable, or frank infection makes this the operation of choice because it removes the infected organ.

(5) *Portes, or Temporary Exteriorization of the Uterus*: This operation is reserved for the occasional hopelessly infected patient where the time element is a serious consideration. Through a longitudinal abdominal incision delivery of the pregnant uterus and its contents on the abdominal wall is easily and rapidly accomplished. The abdominal incision is immediately closed with through-and-through sutures, thereby exteriorizing the uterus. After this has been accomplished, the operative procedure is similar to the classical cesarean section. Depending entirely upon the amount of infection present and the condition of the patient at the time of operation, the uterus may be amputated or allowed to remain on the abdominal surface indefinitely. After the infection has subsided, the uterus may be returned to the abdominal cavity.

SUMMARY

1. The vaginal cesarean section is reserved for patients who need a rapid evacuation of the uterus up to the seventh month of pregnancy.

2. The classical, or conservative section is the one most rapidly and easily performed, but

is limited to patients who are uncontaminated, preferably performed before, or at least shortly after labor has begun.

3. The low flap cesarean section is reserved for patients who have had an adequate test of labor provided there is no gross contamination, or attempts at delivery from below.

4. The Porro, or cesarean section followed by supravaginal hysterectomy, is indicated in frankly contaminated or infected cases.

5. The Portes, operation, or temporary exteriorization of the uterus, is used in the hopelessly infected patient where the time element is a serious consideration.

(Symposium to be continued)

ADEQUATE MEDICAL CARE

E. L. SANDERSON, M. D.
SHREVEPORT, LA.

Medical care for the indigent and destitute is not an interesting subject. In this day and time when frankness has become brutal, one is foolish to prattle about his love and solicitude for the poor. Nobody truly has sympathy for that vast horde of humanity that never has had anything, does not want anything, and would not keep it if they were given everything. There is, of course, a small percentage of people in distress from various calamities beyond their control; with these the meanest of us sympathize, and we will even risk our lives to aid them. They are few and far between in ordinary times, like the immediate present.

I love my work with the indigent and destitute sick because I am well paid for it and it affords me an opportunity to exercise my mind in planning and executing work that is very interesting to me. Take away the pay, and I will quit, and so would you.

I think the first step in dealing with the medical care of the indigent, as well as all other phases of Social Security, uplift, or whatever you want to call it, should be a complete "debunking" of the whole affair. The medical care of the indigent cannot be separated from the

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general question of medical care for everybody; for the ability to pay, or in most cases the desire not to pay, cannot be well or even nearly well defined. There is a definite responsibility on the part of the Government for the health of its subjects; President Roosevelt recognizes it, but I am afraid they will regiment us as so many cattle. Governor Leche sees it and, regardless of whatever else he may undertake, his efforts to aid the sick in a comprehensive way will insure him a place in history more than all else. My suggestions must not be considered a criticism of his plan, but an elaboration. He has no idea of regimenting the medical profession starting "State Medicine". He simply sees the State's responsibility and is trying to meet it. It is the duty of the medical profession to cooperate with him. He is the first Governor of this State, and perhaps of any State, who has started a movement to equalize the opportunities of the sick, in regard to medical attention.

What are the facts regarding the responsibility for illness and for its treatment when it strikes? Is it the same kind of misfortune as being without sufficient clothes or food? No! Much of sickness is due to our coming in contact with the general public and therefore the general public is partly responsible. This applies to every strata of humanity as well as the poor. Therefore, the general public should bear part of the expense of all illness of everybody (provided the citizen desires to accept such aid).

Number one, then, is that illness is in part a public responsibility and the public should bear part of the expense. The degree of this public responsibility has not and cannot be accurately established, and consequently the percentage of medical expense that should be assumed by the public and paid for with tax money, is unknown.

This obligation on the part of the State is just as legitimate as the free school books, public schools, free roads and bridges, and other such services rendered the citizens and paid for by the State; and this partial relief from medical expense should be available to all citizens alike, whether rich, poor or in between.

At present, the indigent are occupying the center of the stage; all the New Dealers, up-

lifters, and money spenders, are weeping over the indigent poor, and driving the real, independent, struggling middle class into poverty to pay the tax bills. They have "monkeyed" with nearly every human activity in America, and there is now every evidence that socialized medicine is just around the corner.

The medical profession has cried, "Wolf! Wolf! State Medicine! State Medicine!" so much that now, when it is really at our door they do not recognize it. Something is going to be done and should be done. Either the social service workers are going to regiment the medical profession and tell them where to "head in" or the medical profession is going to lead the way for lower medical costs to the middle class and suggest a method of caring for the indigent that will not rob them of what little initiative they might have left but rather will encourage them to help themselves.

"Nothing is ever settled until it is settled right," should be our slogan. The doctor has the same right to be paid for his service to the poor as the groceryman has for his groceries.

It is highly desirable that the sick man have the doctor of his choice; I think this is almost as important as guaranteeing our rights to worship whom we please.

Anybody with a thimble full of sense knows that free food, free clothes, and free service cannot go on increasing forever. Every doctor knows that the Charity Hospitals are being imposed upon and that the doctor is actually paying taxes to support an activity that is in turn robbing the doctor of his legitimate livelihood. You are becoming mere reference men. Finally a social service worker will be called instead of the doctor and the patient will be hustled off to a Government Hospital. This is not so alarming now, but we who work in the Charity Hospitals observe that the demand to get something for nothing is reaching into the strata of the self-supporting and even to the well-to-do.

The day for treating illness in the home is passing; it is unsatisfactory and very expensive to the family and community. It would be economy for any community to chip in and pay the sanitarium expense of a neighbor rather than experience the loss of time and demoralization attending sickness in the neighborhood.

But sanitariums are not available in all communities, and where they are near, the expense is prohibitive to those in ordinary circumstances much less the poor.

Now, let us talk facts and sense, and not be slaves to precedent; and in justice to our fellow man and to ourselves, let us work out a system of medical care for the citizens of Louisiana that will be adequate—yes, more, let it be the best: where every doctor will be free to make his own charges; where every patient may choose his own doctor. There is a right way for everything if men will think it through and be willing to treat their fellowmen as you would have them treat you.

I have been in charge of Shreveport Charity Hospital ten years; more than 150,000 patients have been admitted during my time. I thought in the beginning that the system was faulty; I know it now.

I have studied every phase of the question; I may be entirely wrong, but I believe I have the basis for a workable plan. Do not pass on its merits or demerits until you take time to think it through. Before I state my proposition let me remind you first that the Shreveport Charity Hospital has every facility known to medicine for the diagnosis and treatment of diseases; second, that more roentgen ray work, laboratory work, and other expensive tests and treatments are given to the individual patient than are given routinely to the individual patient in any private sanitarium in the State; third, that the food, nursing care and general comfort of the patient are first class. This statement of facts is not made in a spirit of bragging. The State is paying for it, not we who have charge. But it is preparatory to the fourth observation which is that the average stay of a patient is about twelve days and that the entire cost of his stay is about eighteen dollars, even should he have the use of the operating room, ethylene gas, and a dozen laboratory tests or what not. Fifth, at least 75 per cent of our patients could pay this eighteen dollars and a doctor's fee of some kind. And many of them would gladly do so, but they cannot pay sixty dollars for a room, five dollars for laboratory fees, twenty dollars for operating room and extra for services, and ten to a hundred dollars for roentgen

rays and twelve dollars a day for special nurses if they use them.

Here is my suggestion: Have no more Charity Hospitals in Louisiana. Take the two million dollars a year now being spent for maintenance of the New Orleans and Shreveport Charity Hospitals and build and equip a hospital in reach of every citizen of our State just as we have built high schools. The buying power of such a system and the interchange of nurses and internes with the saving that would come from coordinated action, will easily reduce the cost of hospital care to less than eighteen dollars for a patient's whole illness.

Let every citizen, at the time he signs the poll book each year, declare his economic status as well as name his dependents, provided he feels that, in case of illness during the year, he would need financial assistance to some degree.

The Social Security would be furnished this list and would proceed to investigate and certify these people and classify them into three groups, and issue them a card accordingly.

No. 1. Those who are on relief and who cannot pay any hospital bill or doctor; they would be admitted and treated without any charge just as we now treat all who enter Charity Hospital.

No. 2. Those not actually on relief but who are barely making their own way; give them free hospital care but require them to employ the physician of their choice and pay for same themselves. The medical profession should have a special low rate for this class.

No. 3. Those making a living and able to have some of the luxuries—what is known as our middle class; they should pay the hospital the actual cost, in advance, for hospital service and employ their own doctor at whatever financial arrangement they might agree upon just as is done in private practice.

The State will save two million dollars per year; the doctors will receive their just compensation like every other profession; all classes will receive adequate medical care near their homes, and maintain their self respect; and last and perhaps greatest of all, it will develop better doctors and specialists all over the State.

Then, and not until then, will State Medicine no longer be necessary or desirable.

Will there be opposition to such a plan? Yes, and you know from what source. But it would be better that a few doctors who own sanitariums and use them to draw patients away from doctors who have no such connections; it would be better that the few take their places in fair competition with their brother physicians, than for the whole profession to be regimented and dictated to by social workers.

Some will say the next step would be to employ doctors by the month or year to treat patients; that is where I can speak with knowledge and authority: We have splendid physicians at Charity Hospital but the patient will persist in telling us what his home doctor said and he always speaks of him as "the" doctor as though we, who are now to take care of him, are mere hirelings and to be watched (I hope they are not too often correct).

No, they want to select their own doctor; that is the American spirit; it is the attribute that makes Americans, Americans. If we allow this spirit to be crushed out, then freedom is in danger. The true American does not want "charity" even when he is sick; and if our Government would only guarantee to us "justice," we would need little or no charity.

There is a rumor that Louisiana is to be the "proving ground" of State Medicine. It is being circulated by the same people who have always cried, "Wolf," but offered nothing to make State Medicine undesirable and unnecessary. Louisiana could be the proving ground of a system of fair play in medicine.

At present, the doctor who is not connected with a sanitarium is between two millstones—the Charity Hospital on one side and the medical and surgical clinic on the other. The independent doctor like the independent business man, hewed from the wilderness a great United State. Our freedom demands that the doctor still be independent, else he will go the route of the independent merchant, down the throat of "chain enterprise", on the one hand, or put out of commission by regimentation on the other.

Our State is widely known for its initiative; our Governor is interested and anxious to place medical attention in the reach of all. His present plan is perhaps the best and only thing to

do in an emergency; it does not reach the middle man who is not poor enough to enter Charity Hospitals but has not the money to go to private institutions. At any rate, it is the first attempt to correct the weakest link in Louisiana's chain of progress.

At present the revenues of the State are such that much charity is possible; there will come a time when the paper mill and oil rig will have drained our state of the last resource and the change will have to come at a time when we will be least prepared to meet the adjustment.

I repeat, "Nothing is ever settled until it is settled right."

SOCIAL SECURITY AND PUBLIC WELFARE

A SYMPOSIUM*

THE RELATION OF THE MEDICAL SOCIAL WORKER TO THE PHYSICIAN

BEATRICE HODGE†

NEW ORLEANS

In addressing a group such as this I would not have the temerity to attempt to define the practice of medicine; therefore, I consulted the dictionary and found this definition: "Medicine is the art or science of healing diseases." My association with doctors has taught me that this is, in fact, a very narrow definition,—we all realize that disease does not occur in a vacuum. I remember hearing a talk by Dr. Roscoe R. Spencer, United States Public Health Service, in which he made the following statement: "It is as important to know what kind of patient the disease has as it is to know what kind of disease the patient has." To know the patient implies a great many things, and it is in this field that the medical social worker is trained and makes her contribution. The medical social worker is a technician trained in the social aspects of disease, and in this capacity she can extend the effectiveness of the doctor's services in numerous ways.

*Read before the Orleans Parish Medical Society, October 11, 1937.

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A generation ago the family doctor with his horse and buggy was able to visit in the homes of all his patients. He knew them intimately and was familiar with the whole background of their lives; it was a simple thing for him to know the patient as well as the disease. However, with the growth of large cities, where one no longer knows one's neighbors, and with the crowded conditions of hospitals and clinics, it became increasingly impossible for the physician to know the patient's home conditions, his inheritance, his domestic problems and his mental worries. Is this not a handicap to medical treatment and diagnosis?

SPECIFIC EXAMPLE OF SOCIAL AID

A medical social worker can be of assistance here because one of her functions is to interpret to the doctor the environment of the patient and to secure past medical and social data for him. A girl of fourteen comes into the medical ward of a hospital with a thyro-pituitary disturbance which has resulted in her not growing; she is 47½ inches tall, not quite four feet. Because of her affliction she is sensitive and has refused to play with other children. The doctor wishes to find out if there is an accompanying mental retardation. Was the patient abnormally small at birth, did she grow normally the first year, was there a sudden halt in growth later? What past illness had she had and what was the physical condition of the other members of the family? The psychometric test showed a mental age of nine years and ten months, her I. Q. being 72 plus, borderline intelligence. The patient's delivery was normal but she had bow legs at birth and did not walk until she was nearly three. She did not grow fast and during the past few years had shown no increase whatever; the parents and other five children are of normal height. The parents believed a doctor could do something to make the patient grow, as medicine was doing such wonderful things these days. Now that she was fourteen years old she was terribly conspicuous in her community because the people knew she was no longer a child. To make the family of the little fourteen year old girl with the pituitary disturbance consent to let her stay in the hospital for nearly a year and to get the girl herself ready to accept such a long separation was a matter of much interpretation.

Medical social work originated with a doctor who was concerned with the fact that patients who came to the clinic were not getting the relief and assistance for which they came to the hospital. They were utterly unable to carry out the physician's order for proper diet, vacation, rest, change of work, either because they did not understand or did not have the ability to do so unassisted. To make a person realize that he must follow a diabetic diet means a long process of interpretation both to him and to his family. To tell a washerwoman who has eczema of the hands not to put them in water, to tell an expressman who has hernia not to strain himself by lifting heavy weights, to tell a mother of seven children to stay in bed most of the day, are only some of the dilemmas that confront the doctor in the clinic. To prescribe glasses, back braces, orthopedic shoes, a set of teeth, when the doctor realizes that nothing can be done about it, is discouraging. Dr. Cabot describes this situation vividly in his first annual report when he says, "there occurs many times each year a scene not unlike that described in *"Alice in Wonderland."*

"Have some wine," said the Hare.

"I don't see any," said Alice.

"There isn't any," said the March Hare."

Social service is not a solution for these problems, but it can offer definite lines of assistance to the physician which may lessen certain discouraging aspects of clinic service. It can help make treatment possible by bringing the resources of the community to aid the patients in carrying out this treatment. To go back again to our little fourteen year old girl. After nine months' stay in the hospital, from January to September, where she improved markedly, the doctors decided that hospital care was no longer necessary provided she could get the medication at home. She had grown from 47½ inches to 52 inches. She had been treated steadily with anti-pituitary hormone and thyroid extract. The prescribed medication from now on was to be a half grain thyroid extract twice a day and anti-pituitin, 2 c.c. hypodermatically, three times a week.

The family could not afford to buy the medicine nor were the local agencies in the lit-

the town able to help. The hospital agreed to give the treatment free, but it would be necessary for the girl to find a place to stay from September to June. At this point, the resources in New Orleans were tapped and the child was placed in an orphanage where she could get both medical treatment and go to school. Volunteers and the Social Service Department brought her to the hospital for the treatment and in June she measured 55½ inches, a gain of eight inches since her first admission to the hospital one and a half years before.

The doctors at this time thought it was problematic about pituitary extract improving her condition and decided to put her on thyroid, two grains a day. The family agreed to see that she got this medicine at home. She is to return to the hospital every six months for a check-up. Since treatment, the patient's general attitude has improved, her personality has developed, and she is now able to adjust to her home environment.

SOCIAL WORK AT NEW ORLEANS CHARITY HOSPITAL

Because Charity Hospital serves the entire state, the Social Service Department necessarily has to do much of its work by correspondence. The doctor wishes a neurologic history on a patient; an outlined form is sent to a social agency in the parish; he wishes to know if a patient can afford to buy a brace; the agency is written to for a financial report on the family asking that, if the family cannot supply the brace, the agency try to secure it. A patient is discharged from the hospital with diabetes; the doctor's recommendations for diet are sent to his family or to a social agency. Frequently, we refer, to doctors in the parishes, cases in which there is both a serious medical and social problem. On a great many of these we have had excellent cooperation. Also, we receive letters from doctors referring patients to the hospital requesting a full medical report.

Another aspect which confronts the doctor in a clinic is that so few of the patients come back for second visits. How is the doctor going to know the success or failure of his work when he has no opportunity to carry through his plan of treatment or even to make a diagnosis? It is therefore apparent that some system of fol-

low-up should be inaugurated to aid the doctor. The medical social worker can be of immeasurable help here as she can see that the patient reports for treatment when the doctor advises it, that he understands the directions and, if he is unable to carry out the recommendations unassisted, that some provision will be made to help him. Experiments have shown that in a three months' study of a clinic, the number of cases with deferred diagnosis reached 46 per cent, while during the same period when there was a social worker in the clinic the number fell to 6 per cent.

A great deal can be done also in educating the medical students in the social aspects of disease. Medicine is not a trade but a profession to be entered. Many medical schools are concerned with the fact that good practice not only presupposes an understanding of the sciences which contribute to the structure of modern medicine, but that a sound professional training should include a much broader equipment. The late Dr. Francis Peabody said that while the treatment of a disease may be entirely impersonal, the care of the patient must be completely personal.

"When a patient enters a hospital, one of the first things that commonly happens to him is that he loses his personal identity. He is generally referred to, not as Henry Jones, but as 'that case of mitral stenosis in the second bed on the left The disease is treated, but Henry Jones, lying awake nights while he worries about his wife and children, represents a problem that is much more complex than the pathologic physiology of mitral stenosis, and he is apt to improve very slowly unless a discerning interne happens to discover why it is that even large doses of digitalis fail to slow his heart rate Sickness produces an abnormally sensitive emotional state in almost everyone, and in many cases the emotional state repercussions, as it were, on the organic disease. The pneumonia would probably run its course in a week, regardless of treatment, but the experienced physician knows that by quieting the cough, getting the patient to sleep, and giving him a bit of encouragement, he can save his patient's strength and lift him through many distressing hours."

Good medical social work implies also that an understanding relationship shall exist between the social worker and the physician. There are good relationships and poor relationships, due perhaps to the lack of real psychology insight on the part of both the physician and the social worker. Frequently, lack of time may be the cause. The physician has too many patients to see and the social worker is too immersed in the details of her job in making the machinery of the hospital run smoothly, to realize that unless she and the visiting men and the interne come to a mutual understanding of how one can help the other, little may be accomplished. Medical social treatment, like medical social diagnosis, is largely a joint understanding of the doctor and the social worker.

SUMMARY

May I plead for good relationships between the physicians and social workers in our community? We already have a beginning in the Advisory Board of the Gulf District of the American Association of Medical Social Workers which has a membership of eleven doctors. Then, too, is not this medical symposium a second step from which we can expect splendid results? Surely, it is a challenge to us, for we realize only too well that the medical social worker must be on the alert and must be sufficiently articulate as to her function in the hospital and clinic and the underlying principles of social work, if she is to interpret adequately to members of a profession trained in the challenging of ideas.

SOME PHASES OF THE SOCIAL SECURITY ACT

ELIZABETH WISNER, Ph. D.†
NEW ORLEANS

It is fortunate that my brief talk is limited to some phases of the Social Security Act as the Act itself contains eleven titles and more than 80 sections and deals with so varied an array of social, economic, health and educational problems that only a battery of experts could adequately discuss the Act. Broadly speaking, the Act includes certain social insurance fea-

tures, a threefold public assistance program, certain public health and child welfare measures, vocational rehabilitation of the handicapped and certain tax measures. As a statement of social policy, the federal Social Security Act is the most important piece of social legislation ever enacted in the United States. But from the standpoint of structure, it is a complicated, amorphous statute which undoubtedly will be broken down into its component parts through subsequent revision. If we are acquainted with the experience of other countries which passed similar provisions many years ago, we will be prepared to be patient with a new program that may creak badly for a considerable length of time. The unemployment insurance scheme in England, for example, has been amended on an average of at least twice every year since it was first instituted 25 years ago, and it is certain that every title of the Social Security Act will be amended from time to time. Most social legislation is experimental in nature and only through research and study will we find the administrative machinery best suited to our American system of government.

GENERAL FEATURES OF THE ACT

I shall only attempt to touch upon the public assistance features of the Act, namely, old age assistance, aid to dependent children and aid to the blind. First, let us consider the fact that the relief of distress has been an acknowledged function of government for centuries. Contrary to lay opinion, poor relief or public assistance, as it is now called today, was, from the beginning of the American Colonies, accepted as a responsibility of local government. Historically, in this country public welfare antedates private social work and the efforts of volunteer agencies. The insistence, for example, by former President Hoover, when federal funds for aid to the unemployed were first agitated, that the support of this large group of American citizens should be left to private agencies as the traditional American way of doing things simply illustrated Mr. Hoover's ignorance of the subject. Even in Louisiana, we have had a law on our statute books since 1800 requiring the parishes to care for the aged, the sick and the dependent. Most states antedated us many decades in making some provision for the care of dependent persons out of tax funds.

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In adopting the Federal Emergency Act, Congress, for the first time, recognized that the amelioration of destitution was a problem within the sphere of the national government. In enacting the Social Security Act, Congress has provided a permanent program designed to prevent destitution and to promote security and has offered the state and localities the financial assistance and cooperation of the federal government. The public assistance features of the Act are based on the grant-in-aid principle which has long been used to aid the states in agriculture, vocational education, public highways, and health. As a result, the source of financial support is broadened and states like Louisiana gain considerable through the grants of federal funds to match state and local contributions.

THE ACT IN RELATION TO LOUISIANA

We are perhaps most concerned as to the effect of the public assistance measures in our own state. The federal provision for Aid to Dependent Children is, of course, based on our American experience with the mothers' pensions, or mothers' aid, a movement which started in 1911. The principle behind the movement which finally spread to nearly all of the 48 states was that widows and their children, deprived of the support of the breadwinner and dependent upon the community for support, should be maintained adequately at public expense in order to insure a normal home for the children. In Louisiana, we passed a Children's Aid Bill in 1930 but, due to lack of a state appropriation, never put the measure into effect until 1936 when federal funds became available to the state. As it now stands the federal government will reimburse the State of Louisiana one-third of the total expenditure of the state on its program of aid to dependent children up to a combined maximum of \$18 per month for one child in a home and \$12 for each additional child.

In respect to Old Age Assistance, except in the Parish of Orleans, we had no state-wide provision for an ever-increasing group of aged dependents until the Social Security Act was passed and the state, through its public welfare act, provided a basis for matching funds. No feature of the Social Security program has perhaps such wide-spread popular support as the old age benefits and the old age assistance provisions.

The success of the Townsend Movement lay not in its crack-brained, impractical proposal but in popularizing an acute social problem, namely, that of the aged worker discarded at an increasingly early age by an industrial system conditioned by technologic development. Moreover, the Townsend Movement made the aged articulate and no elective official today would hesitate to support adequate care for our dependent aged population.

To the medical profession, old age assistance is of special significance in that a large number of persons in receipt of such assistance suffer from chronic disease in some form or other. Our problem is not just that of dependency but of a new and wider attack upon the whole area of the chronic and crippling diseases from which so large a share of the general population suffers. That is why mere relief or cash benefits to the aged poor is not enough and why medical care and supervision are important. For, if we use this opportunity to provide adequate medical care in our clinics and hospitals and inaugurate a program of observation, research and careful follow-up, untold benefit to all mankind may result in an area in which medical progress has been retarded.

As to Aid to the Blind, the third form of public assistance provided in the Social Security Act, we have had blind pensions in Louisiana since 1928, when the legislature provided that the police juries of each parish provide a sum not to exceed \$300 annually to each "needy, adult blind person" in the parish. In 1934, this was amended to require the parishes to pay at least \$10 per month to each person certified for a pension. Blindness was not defined in the Act and to be eligible for a pension, the person must be 60 years of age or more, or totally incapacitated, and the Act was more in the nature of a pauper provision than a modern blind pension. Since the funds available were dependent upon the local police juries, certain parishes made no provision for the blind. Pensions ranged from \$5 to \$25 per month and, in 1934, of the 1400 blind persons known to the State Board for the Blind, only 375 were receiving pensions. During that year Orleans Parish appropriated \$7,700 for approximately 300 blind pensioners. In 1935, the administration of blind pensions in

Orleans Parish was taken over by the New Orleans Department of Public Welfare, but previously the fund was administered by a representative of the state board who was himself blind, and who was responsible for determining who was in need and eligible for a pension. Under the old act, as I have pointed out, there was no definition of blindness in the act, and the fact of the applicant's blindness was established merely by a certificate from any recognized oculist. The oculist was not required to indicate the degree of the applicant's blindness or to diagnose the cause of blindness. In contrast, the present Act defines blindness and provides that an examination must be made by a physician skilled in the diseases of the eye designated by the State Department of Public Welfare to make such examinations.

The foregoing discussion is very sketchy indeed and I have not attempted even to suggest the highly technical problems which are inherent in the administration of these three forms of public assistance. Rather, I wish to emphasize the larger issues which are of concern to the taxpayer and the public as a whole. And there is one issue, or rather one question, of social policy about which I feel very strongly. It is that our experience covering a period of over 300 years in the administration of relief to persons in need indicates that merely the granting of relief is not enough, or, as the English express it, "maintenance is not enough." By this, I mean that unless we provide certain preventive services, such as adequate health, housing, educational, recreational and vocational facilities, so as to insure better standards of living and the proper growth and development of the children in these families, we do not get adequate return on the investment of our tax dollar. And, eventually, as citizens, we pay out additional taxes in the care of the tuberculous, the juvenile delinquent, and in our attempt to meet the end result of other preventable health and social problems. If we can only see the possibilities of a preventive program, as well as one of the relief of destitution, we will, as tax payers, support an adequate administration of these services which means that a fair proportion of the large funds now being spent must go towards the employment of sufficiently qualified personnel.

Otherwise, no attack upon the preventive side is possible.

SUMMARY

May I sum up the broad purposes of the Social Security Act as follows: "It hedges the major hazards of life about with safeguards which neither the individual alone nor industry unaided can provide. The life of the worker is continuous. The income from his job obeys the tides of the market; his expenses click on endlessly with the clock. This is a case for unemployment compensation. The worker's living comes from his job; yet his life is likely to outlast the skills which he can market. Neither wages nor savings can be depended upon to protect him against want in old age. The way of individual provision is beset with too many perils for safety. This is the case for old-age benefits. A number of hazards which no one can control are in the path of every man and every woman—a dependent childhood, blindness, disability, the need for maternity care, an indigent old age. This is the case for public assistance and special services for health and welfare."¹ Here is the key to the Social Security Act.

1. First Annual Report of the Social Security Board, 1936, p. 6.

THE STATE HOSPITAL AND WELFARE BOARDS

O. P. DALY, M. D.†

LAFAYETTE, LA.

It is an honor to be with you at this meeting of the members of The Orleans Parish Medical Society. It is a very special honor to represent The State Hospital Board and its Director, A. R. Johnson. May I at this time, express my appreciation to the members of The Orleans Parish Medical Society, its officers and to those of you who through your invitation to Mr. Johnson, have made it possible for me to be here. May I preface my remarks by saying that any statements made by me, do not apply either to the Charity Hospital here in New Orleans, or to the Shreveport Charity Hospital. These two

†Superintendent of the Lafayette Charity Hospital Unit of the Louisiana State Hospital Board, Lafayette.

institutions are under a different administrative department.

Throughout the civilized world the payment for nursing care, and for general hospitalization of the indigent sick is being increasingly recognized as a legitimate relief expenditure. Just a short while ago, limited funds were allotted to care for the sick in their own homes, and nursing services were secured from private agencies with assistance from Washington,—that is, federal funds. Public health nursing programs,—for we can hardly call them hospitalization programs,—included such activities as bedside care, school health work, tuberculosis nursing, and other general immunization and nutrition projects.

It is probably too soon to evaluate the progress made by these federally administrated nursing projects. Only a handful, perhaps a half dozen states, have reported any tangible results of their efforts. Fewer still have given concrete indication of the permanency or intended permanency of the program. The move was not without merit. The results, if it were possible to obtain results, are bound to show an infinite and substantial service to the needy people who benefited under this program. We, as members of the medical profession, must concede that whatever medical attention was administered, was better piecemeal than none at all. I have stated that few states have reported any tangible results derived from this inadequate, though beneficial, movement. Louisiana, as you know, was not among those few states. In increased community understanding of the hitherto unrecognized need for an adequate hospitalization program for the poor, tangible results are certain to appear.

The past decade has witnessed remarkable advances in official health administration, which we might quote in popular jargon of today as "mass distribution." Scientific knowledge, however, has far outstripped its effective application. This is not the fault of the agency, whether it be federal, state, or local but rather of a non-receptive and ill-informed public. Since the legal authority under which our official health facilities must be maintained is derived from the people, it is they who must be wise enough both to provide that authority, and to submit

to the regulations and provisions emanating from that authority. An informed and enlightened public, therefore, is the inevitable prerequisite for a successful health or hospitalization program. Louisiana has displayed the desire to help its needy people by creating by special legislation, a state hospital board, and investing in this board the necessary power and authority to effect an adequate free hospitalization program through the State.

During the regular session of the legislature in 1936, the State Hospital Board was created in conjunction with 13 other measures, all of which have to do with social welfare. At that time the lawmakers of this State created the State Department of Public Welfare, through which the public assistance provisions of the Federal Social Security Act could be made operative.

The law states "Whereas, the facilities of the State owned institutions for such purposes are in central locations and, whereas, due to distances, care and treatment of indigent and destitute sick persons are often delayed thereby endangering the public health," there shall be instituted a number of small hospitals and wards throughout the State.

ORGANIZATION OF STATE WELFARE BOARD

The State Welfare Board was appointed by Governor Leche in December, 1936, and included E. A. Conway, Chairman; Mrs. Bolivar E. Kemp, Charles I. Denechaud, J. L. Keenan, and E. Bernard Weiss. A few days later the board elected A. R. Johnson as Commissioner of Public Welfare.

Following the provisions of the law, Commissioner Johnson immediately set about organizing a board of public welfare in each of Louisiana's 64 parishes. He obtained lists of outstanding citizens in each parish. From these lists, he and the board chose ten names and submitted these to the parish police juries. The police juries then elected five persons from the ten to serve as the parish board of public welfare. In your parish, Orleans, 14 names were submitted to the Commission Council, and seven were selected to form the Parish Welfare Board.

In cooperation with the Commissioner, each Parish Board then organized a parish Department of Public Welfare to act as an investiga-

tive and service agency for the ultimate administration of public assistance to the needy and handicapped people of this State.

Because of its greater magnitude and complexity, the organization of Public Welfare Boards and Departments took precedence over the State Hospital Board. When this work finally had been completed and every Parish had a functioning Board and Department of Public Welfare, the Governor then launched the charity hospitalization program by naming the State Hospital Board. The members are: Governor Leche, ex-officio chairman; Mrs. Bolivar Kemp, Mr. E. A. Conway, Mr. J. L. Keenan and Mr. C. I. Denechaud.

Since the services of the Hospital Board were to be for people who were so poor that they could not afford to pay for private treatment, it was not only logical but inevitable that the investigation and social service work of the new hospitals should be supplied through the Parish Welfare Departments which were already familiar with local conditions, already staffed with trained workers, and already enjoying the cooperation and confidence of the local physicians.

Continuing this principle of coordinated administration and the use of existing facilities, the state hospital board then chose as its director, Welfare Commissioner A. R. Johnson.

Field representatives of the State Welfare Department began the survey of the entire state to determine the most strategic points at which to establish Charity Hospital facilities either through contract beds with private institutions, outright purchase of existing hospitals, or construction of complete new units.

The survey disclosed that the two logical points for beginning the program were Alexandria and Lafayette, thriving population centers almost equidistant from the Charity Hospitals at New Orleans and Shreveport and from each other.

I am speaking to you tonight as an authorized representative of the State Hospital Board. I am also speaking as a doctor to doctors. You are members of organized medicine; so am I. Things which interest you, and affect your welfare also interest me and affect my welfare.

One of the questions which interests you is

just what effect the State Hospital Board Program is going to have on the practice of medicine within the State of Louisiana. As you know, conditions governing the practice of medicine are undergoing changes with a rapidity almost impossible to follow. These changes are not confined to Louisiana, but are nation-wide, and even world-wide. The thinking members of the medical profession realize full well that changes are inevitable, and in some manner we must adjust ourselves to these changes as they come.

In so far as the State Hospitalization Program is concerned, I do not believe that you have cause for undue anxiety. I am absolutely convinced that Governor Leche, Mr. Johnson, and the members of the State Hospital Board are sincerely earnest in their desire to do nothing which would injure the practicing physicians of the State. This has been very clearly demonstrated in Lafayette in Lafayette Parish where the Lafayette Charity Hospital is in operation. In common with all of you, the doctors of Lafayette Parish were very much concerned about the opening of a Charity Hospital in their community. We felt, frankly, that it would affect our means of livelihood. I am glad to say to you that this anxiety has been removed. The physicians of Lafayette Parish and the surrounding communities are now thoroughly in accord with this movement. The Lafayette Charity Hospital has absolutely 100 per cent support and cooperation from the physicians of Lafayette Parish.

I have personally contacted every physician in the Parish, and can assure you that these doctors are now heartily in favor of the Lafayette Charity Hospital, and the manner in which it is being conducted. One point I would like to bring home to you, and that is that these hospitals are for the care of the poor, and the poor only. This is absolutely true. No individual, regardless of position, influence, or otherwise, can possibly obtain admittance to one of these institutions. There is one rule, and only one rule. The applicant must be unable to pay for medical services before he or she can be admitted to the Hospital.

Commissioner Johnson asked me to put across to you one point. To quote him: "No man,

woman or child will be allowed in our charity hospitals—that is, hospitals under the State Hospital Board—unless they are positively certified relief clients or cases of absolute emergency.” By the term “emergency,” he meant people in automobile accidents, emergency births or the like—and I shall never forget his sincerity of purpose and the determination on his face as I left him in Baton Rouge and he said, “Dr. Daly, be sure to tell those doctors that they are running this party, not the Hospital Board, not the Governor, and not I.”

A. R. Johnson's only thought is to help those who cannot help themselves and to beg the co-operation of the Louisiana Medical Fraternity.

And it was his idea that a Committee consisting of seven physicians from the Parish of Lafayette be appointed as a Safety Committee for the physicians' interest. This Committee has been selected and they meet once a week, inspect every patient in the Hospital, inspect the record of every person admitted during that week, and report to me as Director any irregularities found. So far, they have found one patient they felt should not have been placed in the Hospital. This patient was promptly returned to her home, with instructions to report to her personal physician.

The Presidents of the Parish Medical Societies of the Parishes to be serviced by this Hospital will be contacted in the near future and will be asked to appoint a Committee from their respective parishes to act in a similar capacity to the one from Lafayette Parish. This, I believe, should convince you that every effort is being made to see that only the poor are admitted to these Hospitals, and that the physicians' interest will be protected.

If you can see it as I see it then you will understand that a little more than a year ago represented Louisiana's “coming of age”; in the sense of approaching our problems of economic insecurity, in an orderly, well organized and planned manner, we believe our State is leading all the other forty-seven.

Very few people now would argue that the State should do nothing to protect its citizens against the hazards and hardships born of poverty, but not so very long ago there were many people who did argue just that. It was not so

long ago that the general consensus was that any one who really wanted a job and was able to work, could find employment. Things are better now they tell us, and depression is over. Things are better, and the terrorizing word depression may have lost its former significance, but poverty and suffering caused by want is still discouragingly prevalent. We doctors realize the truth or fallacy of that statement better than any one else. How much poverty do we see in our rounds every day? How many patients do we treat every year out of the goodness of our hearts, and our inability to let our fellow man suffer when we can ease that suffering, just because they could not pay for our services? Doctors know better than any one else the need for State-wide free medical services to those who are so unfortunate as to be unable to pay for private medical attention, because they know the value of human lives, and they know how many have been lost because of neglect caused by poverty.

Time will not permit me to discuss in detail the disastrous effects that unemployment, accident, sickness, and premature death have on the economic security of the individual and his family. Certainly no one would deny that these hazards exist in good times as well as bad. But what many of us may not appreciate is that even in periods of general prosperity there is a large proportion of our people whose incomes are wholly insufficient to protect them against such hazards; medication, hospitalization and doctors having long been considered luxuries to these people.

Private charities, churches, some few individuals, and we doctors have tried to do what we could to ease the suffering of needy people who were in desperate want of medical care. The progress has been helpful, the drain on our health and our finances has been staggering, but the accomplishment in its entirety, inadequate. This program, by virtue of its nature, its intensity, and its vastness should and must have the word “inadequate” stricken from its three essentials, finances, trained personnel, and organization. By organization, I mean those invested with proper legal authority to administer the program; we were given that legal authority by the lawmakers of this State who created and

enacted the Social Welfare laws at the last Session of the Legislature. By trained personnel, I mean, doctors, nurses, medical social workers, and the subsequent office and clerical personnel. By adequate finances, I mean a regular and adequate source of revenue which will enable us to carry on without interruption—these funds will and must be provided.

SUMMARY

There may be some few conscientious objectors to this state-wide hospitalization and general public welfare program. It was to be expected. These objectors contend that recipients of public assistance or public free hospitalization, or so far as that is concerned, aid in any form, will always be dependents or vagrants and as such, should be ignored. This vision is a cramped one; a vision which is fraught with despair and futility; a vision which will tend not only to destroy the underprivileged, but one which will kill their faith in all humans. Fortunately for Louisiana, the entire public welfare system has a man at the helm who sees a sane future. I prophesy that Louisiana's ranks of underprivileged will be greatly reduced under his able direction, and, with the valued and essential cooperation of the doctors to whom he is looking, the lives of our men, women and children will have been not only prolonged but made much happier and healthier.

FEDERAL AND STATE PROGRAM FOR MATERNAL AND CHILD HEALTH

R. W. TODD, M. D.†
NEW ORLEANS

The health of the citizens has always been the responsibility of the state. Whether or not it has been the concern of the state—is another question. In primitive society, men of the tribe were required to give services for a common cause without expenditures of money. In civilized society, men of the tribe are still required to give their services for a common cause—but, with this difference: There needs must be expenditure of money where health protection has become a commodity. And, why not? Health

protection is, in part, a new science and, as such, is properly labeled and ready for popular consumption; further, it is purchasable. It is not the administration of unsure practices and an experiment on an unsuspecting public but a definite, scientifically proved protection administered by an academically and professionally prepared group.

The Social Security Act (1935) of authorized Federal aid to states for four phases of child health and welfare, including grants for aid to dependent children, for maternal and child health services, for services for crippled children, and for child welfare services. The first of these services is administered by the Social Security Board, and the other three are administered by the Federal Children's Bureau. State agencies make the plans for the work to be done. When these plans meet the terms of the Federal Act, grants to the states are approved on the basis of allotments made under the provisions of the Act. For each of the programs administered by the Children's Bureau, the Act designates that in the distribution of funds special emphasis shall be given to rural areas and areas suffering from severe economic distress.

Forty-three states, including Louisiana, the District of Columbia, Alaska and Hawaii, have qualified for the Federal grants for Maternal and Child Health Services. Practically every state now has a Division of Maternal and Child Health, as a major division of the State Department of Health.

I need not go into the facts, which, prior to Social Security, prevented the states from developing a program with such specialized implications.

Following the availability of Federal funds, there was created, in the Bureau of Parish Health Administration of the Louisiana State Board of Health, the Louisiana Division of Maternal and Child Health. This division is coordinate with all other major administrative divisions and has a full time medical director.

All state plans have one or more similar features aimed at the education of doctors, nurses, parents and children in the care of the health of the mother and child. The Louisiana plan, for example, includes an educational program

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for rural physicians in obstetrics and pediatrics. The plan, this year, is to offer Refresher Courses in Pediatrics in centers of each of the Councilor Districts of the State Medical Society (exclusive of the first and second districts). This work is to be carried on in co-operation with the Committee on Medical Education of the State Medical Society. The lecture course is to consist of five lectures, on consecutive days, in each center.

Field supervision of the generalized plan, with emphasis on expansion of Maternity Nursing, has been made possible by this Federal aid and is meeting a definite need. Each of the thirty-eight unit parishes is benefiting, either in the way of additional personnel and/or supervision.

Every state whose plan has been put in operation is undertaking one or more demonstration projects related to its particular needs. For instance, Maine, in each of two counties is putting on nurses to give prenatal supervision, nursing care at delivery, and postpartum supervision for (200) prenatal cases a year in each county; California is providing nurses to serve migratory agricultural workers to aid them in protecting the health of the mothers and children; Louisiana is operating a Maternity Demonstration Base in Orleans and a portion of Jefferson Parish, in cooperation with the Louisiana State University Medical Center. The obstetrical staff of Louisiana State University Medical Center provides medical service, antenatal in clinic—at delivery in home—and postpartal clinic service. The field and clinic nursing service is provided by the State Board of Health. This project was designed to provide a facility for training nurses in the various phases of Field Maternity Service and to give field obstetrical experience to medical students. Health Department Nurses and trainees follow a definite course of study and training in this center. The city of Shreveport boasts a well regulated maternity clinic, with nursing service by the local unit. There has been developed in Monroe a cooperative service including delivery. This service is endorsed by the local medical society and is administered jointly by a non-official group and the local health department.

THE AIMS IN LOUISIANA

The aim of the Louisiana Division of Maternal and Child Health is, at the present time, the organization of Maternity Clinics in all locations indicating need. The establishment of clinics, in addition to rendering a direct service, serves as an educational factor in teaching the essentials and significance of prenatal and infant care to the layman. The clinics, also, tend to make the layman "doctor conscious", as it is an aim of the clinics to get patients under the care of physicians. The ultimate perfection of the plan involves joint working and thinking between local private physicians and local health department.

Louisiana is operating a mobile diagnostic unit to aid in combating tuberculosis among children. This work is directed by a specially trained clinician, assisted by trained professional personnel, and will, in time, cover the state and will work with local Health Departments and physicians.

Over and above the state-wide Maternal Program, Child Health Services include medical conferences for supervision of the infant and pre-school; supervision of the unlicensed midwife who, whether we like it or not, is with us; school health activities, and cooperative activities with tuberculosis and venereal disease control units.

The Crippled Children's Program, as it is launched in state after state is going to bring to light the children who are crippled or who suffer from conditions which may lead to crippling, and will make medical, surgical and hospital care available for them. In most states, the State Health Department will administer the program. Its significance lies in its goal: the finding of ways and means to secure care and service for all crippled children, on the farm, in the village, as well as in the city.

The services of a nutritionist are engaged for the purpose of making local food studies and the ultimate printing of practical aids for use of field workers. Particular emphasis will be given to nutrition habits of expectant mothers and children.

The state programs involve cooperation of local governmental units, the state, and the Federal Agency. The Federal funds available to

each state do not permit more than a "demonstration" of what the needs are in rural communities, and of what can be done in a tangible way to serve in the field of Maternal and Child Health. Yet, with a firm foundation of public health administration in the field of Maternal and Child Health as now established, we believe not only that the work should be carried on, but that different aspects of the program should be extended where the need of them is obviously greatest.

SUMMARY

The immediate future will not show decline in maternal or child mortality. Our program has limitations—our readiness for handling is glaringly questionable in spots. Recognizing our deficiencies, it is comparatively easy to plan but not so easy to launch a sound scientific program uniformly. We must have further opportunity to continue the training of our personnel and until the merit and scope of the program have been understood and appreciated by our fellow professional workers, progress will be slow. I believe, however, that the future performance of those responsible for the development of Maternal and Child Health will be of a quality so high that it will be a privilege for any professional worker to belong to this history-making group!

THE RELATION BETWEEN PREVENTIVE MEDICINE AND FEDERAL AND STATE WELFARE PROGRAMS

W. H. PERKINS, M. D.

NEW ORLEANS

Medical service is an integrated effort to maintain and restore health; it is motivated by the acceptance by the group of its responsibility for the health welfare of its members, and the responsiveness of certain individuals, the physicians, to the interests and possibilities in the science and art of medicine. These mixed motives lead to various health activities and, depending on the circumstances, result in accentuation of either the preventive or curative aspects of applied medicine. Heretofore the social motive has dominated public health, while the curative aspects of medicine have been the chief interests of the practitioners (including teachers,

investigators and public servants engaged in clinical work).

The present interest concerns only the preventive aspects of medical service. Preventive medicine in the past has operated on a centripetal basis. Social procedures very naturally adopt broad general measures when they initiate new attacks on public welfare problems, and public health has been no exception. Starting with the elimination of nuisances it undertook to improve community sanitation as quickly as new knowledge and instruments became available. Gradually, the health authority began to cut across its social institutions, promulgating regulations, codes, and laws as it went, until today it has reached into the home, the office, and the small shop, to the individual. Having gone this far it was found necessary to curtail personal privileges under certain conditions, and more lately has seen the necessity of participating in the education of the individual.

Contrasted with this is the historical development of private medical practice. The physician has long been the protector of the individual in medical matters. He has consummated a rapport with his patients that can hardly be shaken out of its sometimes obviously insecure position, and through it has received privileges and obligations that are accorded few other members of society. Slowly and begrudgingly, private practice has conceded some of its privileges to the penetrations of the medical authorities of its group, and is at present at a period of medical enlightenment where it recognizes the need of some degree of social control, particularly in communicable diseases, and finds that some of the instruments of public health are applicable to immediate use in private practice. But throughout this evolution private practice has shown little of the insight acquired by public health into the need for increased cooperation by the people in order that its own tasks may be made easier and more effective. What little part it has played in the maintenance of health and the prevention of disease has been almost incidental; it has taught and supported personal hygiene in general but with little enthusiasm, and is only now beginning to press the possibilities of prevention in pediatrics and maternal welfare. Organized medicine has given its enthusiastic approval to

the principle of the health examination but the practitioner has made little noteworthy contribution to the use or usefulness of this valuable health instrument.

A synthesis of preventive practice must bring together all known methods of prevention and the machinery for their application. It must culminate in a coordinated effort by the public officials and private citizens, the physicians in public service and private practice, and all official and non-official community organizations. Such has not yet been attained and is not attainable until prevention becomes an attitude of the community and every man, woman, and child knows that disease is not inevitable and much of it can be prevented by their interest, understanding, and cooperation.

Whatever synthesis can be accomplished in preventive practice must start with the scientific facts which are applicable to it. To these must then be added: their understanding by the medical profession as a whole; their application by the profession through practical measures as they become available; the information of the public as to the possibilities in the preventive measures; the acceptance of the principles by the authorities of the social group; and the institution by the group of social measures which will enable the principles to be applied for the good of the community as a whole.

At whatever point the integrated effort fails to plan and to act on the scientific principles of prevention, there the synthesis will break down and will not only fall short of its aims but will open a breach for the penetration of illogical, unscientific, prejudiced interests.

Such a synthesis will be attained slowly because the illogical interests already exist. In all advanced countries the elements of the synthesis are at hand in a medical profession: available educational channels, an enlightened public authority, and effective general preventive health measures; but along with these lie the failure of the doctors to apply themselves to prevention, the ignorance of the public, the politicalization of public authority, the alleged sanctity of special interests and their deluding propaganda, the limitations placed on the effectiveness of general health measures by religious dogma, private rights, health cults, fads, and charlatanism.

The extension of activities of existing State and Welfare Agencies that are concerned with the health of the people and the institution of new procedures as embodied in the Social Security Act and newly-established Departments of Welfare are indications that public authority must aid in medical service to the community whether municipal, state or national.

EVALUATION OF EXISTING HEALTH NEEDS

Public authority has found it necessary to evaluate the existing health needs in every community and has considered it expedient to participate in the attack on the health problems which it has revealed. This attack has been launched in two main channels: (1) Through medical services operated by and under the control of physicians; (2) by assistance to non-medical public authorities whose efforts will have an indirect influence on the health of the community.

The first is represented at the top by the Social Security Act directed in all its medical aspects by a physician, the Surgeon General of the Public Health Service. The amount of preventive medicine which it sponsors in any community depends on the interests and activities of the physicians in the community in the maintenance of health and prevention of disease. Whatever criticism the medical profession makes of this effort is first of all self-criticism for it has its birth in the physician's own failure to understand and appreciate the absolute necessity of broad preventive measures and the part which he should play in applying them. Under *any* political system the private practitioner must not only interest himself in the social aspects of medicine but must participate in formulating the *best* social procedures for the community in which he has been granted the right and responsibility to practice medicine.

The non-medical public welfare services are largely such only in name; they are indirect health agencies. They cannot do as many industrialists do, close their eyes to the health needs of their employees. The intelligent employer sees the value in the health of his workers to his output and utilizes members of the medical profession to protect his industry against the losses of sickness and inefficiency.

Welfare agencies can hardly make any move

which is not directly or indirectly concerned with the health of their clients. Good housing, good food, financial assistance to obtain them, and work for all employables *are* health measures. Physicians alone can properly evaluate the effectiveness of such measures on the health basis, and as they are called in by industry, so should they be called upon in the formulation of all social welfare activities.

I plead then for sound criticism from the doctors of all measures instituted by Federal authorities and particularly of the manner in which they are administered and performed in state and local communities; I urge the non-medical authorities to seek out and listen to the advice of physicians in all that they undertake that is concerned with the health of their people, and that means practically everything they do; and I hope that every physician, whether serving the community in a public or private capacity will study the problems with which we are faced, in order to know whereof he speaks when he criticizes public health and welfare measures, but never to cease in his criticism.

Could the health authorities of the nation, state, or communities start with a clean slate there is no doubt that preventive medicine would occupy most of its resources and efforts. But sickness, disability, and ineffectiveness are already present and must be dealt with. While we are cleaning up the debris of uncontrolled but preventable disease, we must constantly fight to keep the flames from spreading. Let those who are not socially minded carry on their work in private, and the lay members and physicians who are largely occupied with the problems of the community accept the intelligent criticism of the former who are as equally disturbed by the discomforts of ill health and labor day and night on behalf of their patients.

There are two evils which intrude themselves into the problem of social programs devoted to the prevention of disease and care of the sick. The first is the entry of politics into medical care. There is no one today so unintelligent as to deny the need of community planning toward the control of disease. A certain coordination and centralization is necessary and has always been accepted by medical and non-medical persons alike. But the use of medical services for any other than medical purposes cannot be condoned and must be fought on every hand. Physicians can and should act as lay citizens in a concerted effort to overcome this persistent evil.

The second objectionable feature of social health programs is sentimentality and emotionalism. Everyone is sorry for the sick, the underprivileged, the handicapped, and necessitous. But intelligence alone can help solve their problems. The abuse of the intellect by sentiment distorts the picture and prevents the use of cool logic which is so necessary today.

With understanding, tact and an approach to the use of the scientific method, social progress will go on to a satisfactory solution of community welfare and health problems and prevention of disease and maintenance of health will pervade the whole effort.

SUMMARY

Preventive medicine to the philosopher is the recognition of a logical procedure based on causality; to the scientist it is the application of the known facts of cause and effect; to the physician it is the approach to ideal service; to the individual it is a way of living; to society it is the basis of effective community life. To all it is health, happiness and the best means to its end, the well-being of mankind.

NEW ORLEANS

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THE ANNUAL MEETING

The physicians of the City of New Orleans extend greeting and best wishes to the members of the State Society who will convene on May second in this city. It is earnestly hoped that there will be a large attendance of the doctors and their wives from throughout the state. The medical profession of the city welcomes the advent of the visiting doctors, and hopes that they may have a well spent three days, both socially and scientifically.

TAXATION

In the various discussions which have taken place concerning state medicine, the medical profession has neglected, in goodly part, to stress the fact that state medicine cannot be put in force without a considerable increase in the budget of the federal and state governments. The average man, including most physicians, is so taxed at the present time that a very goodly proportion of his income goes to the support of various government activities. The physician is taxed coming and going. He pays tribute to the national, to the state, to the parish and city governments. If state medicine was put in effect, his taxes, just as every other man's taxes, would be increased. When one stops to consider that twenty-five per cent of the tax paid by the public is hidden tax and that a goodly proportion of the doctor's income goes to direct taxes, it is perfectly appalling.

It is not time to reduce taxes instead of raising them? It is currently reported that the State of Louisiana has a balance of over eighteen million dollars which has been unexpended. Plans will undoubtedly be made to expend these monies, not that their disbursement is indicated or needed, but because they are available. New medico-social schemes will be elaborated to get rid of the surplus. Why not use it to reduce the state debt? Why not reduce state taxes instead of employing it for nebulous and unproved schemes, which, sooner or later, will hurt the physician economically and take from him many of the sources of his revenue?

THE BIRTH OF A BABY

The film, "The Birth of a Baby," which was shown at the recent meeting of the Southern Medical Association in New Orleans and which has been shown repeatedly around the city, is a film which has been put out under the auspices of a large number of organizations interested in maternal and child welfare. Amongst these organizations are the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, the American College of Surgeons, the American Gynecological Society; the Children's Bureau of the United States Department of Labor, the United States Bureau

of the Census, the United States Public Health Service and many others. The film has been prepared with the definite purpose of educating the laity in the need of medical care preliminary to and during the delivery of the baby. It illustrates graphically what should be done for the expectant mother, what takes place during pregnancy, and what takes place when the baby comes into the world. That its educational features are of importance cannot be gainsaid. The laity is taught about the dangers and prevention of tuberculosis, heart disease and cancer, but little progress has been made in educating people concerning the pitfalls of pregnancy. The maternal death rate in this country of ours is portentous, when contrasted with that in other civilized countries. Anything that can be done to minimize the toll of lives due to a normal physiologic function is worthwhile. The film stresses the importance of medical care in the prospective mother's life and the need of the skilled physician at the time that the baby is born.

In view of the large number of outstanding organizations represented in the Committee on Maternal Welfare, and in view of their general approval, it is surprising that the reproduction in *Life* magazine of some thirty-five pictures taken from this film should create such a furor. The sale of *Life* was forbidden in many cities, including New Orleans, and even some states. That this censorship should have taken place is all the more remarkable when one considers that the most sexy of magazines which are definitely pornographic in character are permitted to be sold in localities where *Life* was banned, on exposed newsstands to any person who wants to buy them, irrespective of age.

TREATMENT OF DIABETIC COMA

The treatment of diabetic coma seems to be more or less standardized: glucose by vein, large doses of insulin, rest in bed, heat, alkalies at times, plus digitalis. With the introduction of insulin, popular hopes were entertained for the prompt recovery of patients falling into coma, if this treatment sketched above was followed. As a matter of fact, it is largely the impression that the great majority of patients recover immediately with this line of treatment; but such is not the case. The general concept

is that the only patients who die of diabetic coma are those who are advanced in years and who have had coma for a long period of time. Prognosis is assumed to be excellent in young people. As pointed out in the *British Medical Journal*¹, published reports of young diabetics in coma are not particularly optimistic as to outcome, and there is still room for improvement in the treatment of this condition. Three years ago Hartmann² reported upon a series of patients with severe diabetic acidosis, treated with sodium lactate. His report was a most careful scientific study of this condition, but, in spite of the authenticity of anything coming from Hartmann's clinic, apparently the method needs attention as it has not been popularized. It has been quite generally disregarded, as a matter of fact.

Joslin³ does not think the method is as successful as that which he employs and which is the one generally used throughout the country. Reports are appearing which will indicate that all patients do not recover when given insulin and glucose. Sometimes these patients improve only after being given sodium lactate. This fact should certainly be remembered when treating patients responding poorly to the standard treatment of coma due to diabetes. Furthermore, Hartmann finds that if sodium lactate is used in place of sodium bicarbonate, the glucose solution may not be required. Specifically, Hartmann treats his patients as follows: 60 c. c. of one-sixth molar solution of racemic sodium lactate is given per kilogram of body weight, one-half intravenously, the remainder under the skin; (2) two units of insulin per kilogram of body weight is given immediately; (3) 40 c. c. Ringer solution per kilogram of body weight shortly after sodium lactate solution; (4) repeat insulin in six hours in dosage of one-quarter that originally administered.

With this form of treatment, according to the author, there is a rapid return to the normal acid-base balance of the blood; there is a prompt abolition of ketosis, hyperglycemia and glycosuria; and, once being standardized, it requires only thirty to sixty minutes to be carried out, with little or no laboratory assistance.

REFERENCES

1. Ed. *British Med. J.*: March 26, 1938, p. 683.
2. Hartmann, A. F.: Treatment of severe diabetic coma, *Arch. Int. Med.*, 56:413, 1935.
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HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

NORTH LOUISIANA SANITARIUM

Following dinner in the dining room, the regular meeting of the North Louisiana Staff was called to order by the President on February 22, 1938, at 8 p. m., with twenty-three members present. Visitors were Drs. Reed, Paty and Nicholas.

Minutes of the previous meeting were adopted as read. Dr. Dickson, reporting for the Laboratory Committee, proposed certain changes in rates, as suggested by hospital management, and these were adopted.

Following the reading of the hospital report and the discussion of the deaths, the scientific program was begun.

Dr. Herold presented the case of a 14 year old boy, who came to him with vomiting, headaches, partial blindness, choked discs, and whose spinal fluid pressure was 300 mm. water. In spite of the negative spinal fluid Wassermann, an eye man suggested that this was an old central nervous system lues and advised antiluetic therapy. After the fifth injection of tryparsamide the boy had several fainting spells and was unable to walk. After this new development, it was decided that the boy most probably had a cerebellar tumor and the patient was referred to Dr. Sachs at St. Louis. A letter from Dr. Sachs was read, in which he stated that a 7 gram cerebellar cyst was removed and that the boy was improving.

Dr. Dickson reported the case of Mrs. S., aged 43, who had miscarried at 6-10 weeks with three previous pregnancies. A roentgen ray at the eighth month of this pregnancy revealed a generally contracted pelvis. The cause of the previous miscarriages was unknown; the Wassermann was negative. By classical cesarean section, a male infant was delivered which presented a large hernia into the umbilical cord. The sac was examined and found to contain the liver and the bulk of the intestines. Under drop ether anesthesia the sac was opened and an attempt was made to reduce the hernia, but the abdominal cavity had failed to develop large enough to contain the abdominal viscera. The case was discussed by Drs. Mays, Rigby, Lucas, and Weil.

N. Judson Bender, M. D., Sec. *

MERCY HOSPITAL

The regular monthly meeting of the Staff of Mercy Hospital was called to order at 8 p. m. on Wednesday, April 6, 1938, by the President, Dr. E. L. Zander.

The scientific program consisted of three interesting case reports.

The first case, presented by Drs. E. L. Zander and Geo. Hauser, was an unusual ectopic preg-

nancy. A multipara was seen on October 7, 1937. She had not menstruated since August 22, 1937 and had been suffering with menstrual-like pains. There was also a feeling of pressure in the lower abdomen and vagina. There was a history of previous pelvic inflammatory disease. Examination at this time revealed: B. P. 120/80; heart and lungs negative; abdomen negative except for a McBurney scar; vagina showed evidence of perineorrhaphy, heavy brown vaginal discharge, cervix soft, uterus and adnexae apparently normal. Wassermann negative. One week later, October 14, 1937, symptomatology and physical examination were unchanged. On October 20, 1937 there were generalized abdominal cramps with increased bloody vaginal discharge. B. P. 120/70. Uterus, adnexae still apparently normal.

On November 4, 1937 vaginal bleeding was still present. Patient complained of vomiting, lower abdominal cramps and of a pain starting in left hip that progressed down left leg. Uterus and right adnexa normal but there was a suspicion of a small mass in the left adnexa.

On November 11, 1937 the sedimentation time was 60 minutes. On November 15, 1937 the Friedman test was positive. On November 16, 1937 examination showed cervix soft at tip, uterus not enlarged and the mass in the left adnexa had become about the size of a small hen-egg.

On November 18, 1937 the patient was laparotomized and the left fallopian tube removed. It contained a purplish mass about the size of a small hen-egg in the isthmic portion of the tube. The patient made an uneventful recovery.

Dr. Zander then discussed the clinical features of ectopic pregnancy giving the incidence, classification, etiology, symptomatology and treatment of this condition.

Dr. Hauser presented the preserved and mounted specimen to the staff for inspection, together with several stained microscopic sections. He discussed the pathologic features of ectopic pregnancy and diagnosed the specimen in hand to be a 4-6 weeks pregnancy intact within the fallopian tube.

Discussion of this case was opened by Dr. J. F. Dicks, followed by Drs. J. E. Brierre, C. F. Belone, J. S. Hebert and closed by Dr. Geo. Hauser.

The remaining cases were presented in the manner of a diagnostic dry clinic. A mimeographed copy of the complete case histories including laboratory and physical findings and progress notes was furnished to each staff member present. Discussion and diagnosis was then invited by the chairman. This mode of conducting the scientific program is an innovation at Mercy Hospital and will be thoroughly tested by the

Chairman of the Program Committee, Dr. J. K. Howles. The initial presentation was well accepted by the staff.

One case was diabetes mellitus in a man 29 years old. The discussion was opened by Dr. B. F. Mancuso followed by Drs. W. J. Otis, J. E. Brierre, Leopold Levy, W. G. Troescher and closed by Dr. Geo. Hauser who presented the autopsy findings.

The other case was bronchopneumonia and interstitial nephritis in a man 52 years old. The discussion was opened by Dr. B. F. Mancuso followed by Drs. C. J. Vedrenne, W. J. Otis, J. F. Dicks, W. G. Troescher and closed by Dr. Geo. Hauser who presented the autopsy findings.

E. R. Guidry, M. D., Sec.

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held in the Nurses' Lecture Room of Hotel Dieu on Monday, March 18, 1938. The meeting was called to order by the President, Dr. A. D. Mouledous, and with the Secretary, Dr. C. E. Gorman, at the desk.

The scientific program consisted of clinico-pathologic conference on "The Pathology in Elixir Sulfanilamide Poisoning," by Dr. M. Couret.

The pathologic specimens and slides presented to you are from the first cases of the "elixir" sulfanilamide poisoning discovered by Dr. I. A. Nelson in St. John's Hospital in Tulsa last fall. I wish to thank Dr. Nelson who has so kindly loaned us the material for this conference.

Let us remind you that the poison was not by the sulfanilamide, though this drug should be used cautiously, but by the solvent diethylene glycol. The term "elixir" was misleading and at first confused the issue since elixirs are not poisonous and diethylene glycol is not an elixir but was apparently labeled as such. There was at first the possibility that the combination of diethylene glycol and sulfanilamide might have produced a poisonous compound because diethylene glycol alone is used in some industries with apparently no ill effect. But this idea was quickly discarded when the pathology found in the cases was reproduced in the lower animals with diethylene glycol alone and not with sulfanilamide alone. Moreover the chemical analysis of the mixture revealed no new formed poisonous compound.

Clinically, the first evidences of the poisoning appeared with vomiting, anuria, and later coma, with slight edema usually of the face only. This picture of course may be somewhat misleading as these symptoms appear during the course of an illness, usually an infection for which the drug is given, and may be confused with the symptoms of the pre-existing disease.

The characteristic lesions in diethylene glycol poisoning are in the kidneys and liver. The pathology elsewhere is mostly secondary and not uniformly present in every case. The kidneys are enlarged to over one-third their normal size. The surface, stripped of its capsule, shows a finely granular purplish red color with small irregular spots of yellow throughout the dark red tissue. There are also definite small infarcts scattered over the surface. On section the same picture presents itself but principally in the cortex. The glomeruli are prominent and bright red. The microscopic picture shows numerous small infarcts and small diffuse hemorrhages besides the classical hydropic degeneration (foamy cells) in the uriniferous and collecting tubules. The swollen cells and cell detritus and casts obliterated the lumens of these tubes. The glomeruli are congested and some are hydropic but there is otherwise no definite pathology in these. The supporting tissue is not disturbed and the blood vessels, besides congestion, are otherwise negative. There is moderate leukocytic infiltration, mostly round cells, about the small infarcts.

Grossly the liver presents a smooth capsule below which is seen the liver tissue mostly light brownish yellow in color with small pin-point spots of bright red tissue. On section the same picture prevails. The microscopic section shows much the same pathology as the kidney: there is a congestion of the central vein of the lobule and foci of degeneration in the form of hydropsis (foamy cells) of the liver cells with pyknosis of the nuclei. The foci are not necessarily central but may be found in any part of the lobule and there are frequently two or more foci to a lobule. Leukocytic infiltration is mostly about the portal tracts and the prevailing type of cell here is the lymphocyte.

The mucosa of the intestines is swollen and congested in spots and there may be found some blood in the feces but this pathology is not constant.

In most cases a terminal bronchopneumonia usually sets in a short while before death.

DISCUSSION

Dr. Aldea Maher: The "elixir" of sulfanilamide Massengill that was responsible for so many deaths contained as a solvent diethylene glycol. This has never been accepted for internal use, and has only been used in industry. This should not be confused with ethylene glycol which is used as an ingredient in the antifreeze mixture. They are both unsaturated alcohols of the fatty acid series and should never be used internally. It is possible that sulfanilamide being so unstable may decompose in the presence of an aqueous solution of diethylene glycol but by analysis of the Massengill "elixir" the amount of the sulfanilamide put

in the "elixir" was recovered from the samples. It was concluded that it was not the sulfanilamide that produced the deaths in the "elixir" sulfanilamide Massengill but it was due to the solvent diethylene glycol which in the doses recommended by the manufacturer acted as a cumulative poison.

Sulfanilamide is para amino phenyl sulfonamide and, being a derivative of anilin and so easily decomposed by all substances except sodium bicarbonate, should be used with great caution especially in cases where there are already damaged kidneys. It should never be used in the presence of magnesium sulphate as the SO_4 ion tends to increase acidity and there is already a profound acidosis produced by the administration of sulfanilamide. There has been much confusion in the several preparations of sulfanilamide and its derivatives, the European and American prontosil. All these are different substances. The original prontosil first used in Europe is a hydrochloride and is the most acid of all the preparations. The American prontosil is the disodium salt and is a different substance from the European substance and sulfanilamide. Sulfanilamide itself is the simplest substance containing only one benzene ring while the European prontosil has two benzene rings and an azo group while the American prontosil has the naphthalene ring. Prontylin is the same as sulfanilamide. Sulfanilamide seems to be the least toxic of all and when carefully used is proving to be a most valuable drug. It appears in the blood stream and spinal fluid in a few hours. It is excreted in the urine as sulfanilamide and partly in a conjugate form as para acetyl amino benzene sulfanilamide.

Dr. H. E. Bernadas: I want to compliment Dr. Couret and his Staff for the presentation of this subject, it could not be brought up in any other medical body as clearly and concisely as Dr. Couret has done tonight. Diethylene glycol has been used and is still being used as the non-irritative factor in one of the popular brands of cigarettes for several years. It has not been harmful for that time. I want to ask Dr. Maher who has handled the chemistry in this discussion to explain this. I am anxious to know if the doctor believes that the burning of the diethylene glycol while smoking volatilizes it and probably renders it non-noxious, or whether its innoxiousness is due to the minute quantity used which in turn is diluted to infinitesimal proportions by air and smoke dilution or finally if it is innocuous.

Dr. A. Maher: So far no satisfactory explanation has been given for the non-irritating effect of the diethylene glycol but that is probably due to the fact that it is present in such small quantities and that no irritating substance is formed by the action of the heat during the smoking.

Dr. J. A. Danna: Something over a year ago Dr.

Taquino raved about prontosil so much that it reminded me of how in 1910 a young American doctor in Vienna raved about a new drug that Ehrlich had brought out which he said would relieve all of the symptoms of syphilis with one dose. Two doses would usually and three surely result in a permanent cure. I thought the claims absurd and refused to bring home a few doses. I felt very much the same way about the drug that Dr. Taquino was talking about till I had a patient with puerperal septicemia. She had temperature 105° and two or three chills a day. I remembered what Dr. Taquino had said and put her on prontylin by mouth and got no results. After consultation with Dr. Graffagnino I gave prontosil by needle in large doses and it worked like magic. Blood culture which was positive became negative and the patient made a rapid and complete recovery. Of course I was convinced. No so very long ago I was laid up with a bad cold that failed for weeks to respond to the usual remedies. Finally I thought it might be a streptococcic sore throat and I have never seen such a remarkable result as I got from sulfanilamide. I have had occasion to use sulfanilamide in a number of surgical infections with gratifying results. In order to get results you have to saturate the system up to a certain point. If you do not give the sufficient dosage you will not get results. As Dr. Jamison said, almost every disease has been treated with sulfanilamide within the last couple of years. Streptococcal infections of all kinds, especially cellulitis, will disappear like magic after proper dosage. I believe that we have in this drug a very remarkable agent for the treatment of many things.

Dr. A. Mattes: I became interested in the use of this drug following the reading of an article in Time magazine. To my surprise it worked out better than the article led me to believe. In order to get results in severe gonococcic infections it was necessary to give large doses, about 75 or 100 grain tablets the first twelve days and then six to eight tablets a day. The most surprising thing is the magic quality of this drug in a patient with gonorrhea who is unable to urinate, has to be catheterized, and within one day the urine was clear. With the aid of this drug and the ordinary form of treatment you will get marvelous results. In a number of cases I used the drug and no local treatment and the results were only 50 per cent. In cases of epididymitis, pain was relieved in one or two days and the swelling disappeared. Non-specific urethritis can be cleared in three to six days' treatment in most cases. It does away with irrigation and other forms of treatment. In pyelitis, I have had no result. In staphylococcal infection of the kidney, no result at all. Wherever there is stasis, there will be no result. It has rev-

olutionized treatment in acute gonococcic infections in the male and likewise in the female—these patients are cured within a few visits. If you do not believe it, try it in the next few days and check up with the laboratory and you will be convinced.

Dr. H. J. Lindner: I am strong for this drug. I think it is the greatest advance in chemotherapy since salvarsan. In many cases of gonococcic infection the drug has no effect at all while in others the results are remarkable. I have cured gonococcic infection on nothing else but sulfanilamide in two weeks. In other cases, the drug seems to have no effect at all. Some patients will not respond to anything but large doses and others will do well on small doses. I give as much as eighty grains a day. You must treat the patient and not the disease. I have seen patients on eighty grains a day in whom the drug had to be stopped the following day due to weakness and dizziness and improved nicely when continued on five grains three times a day. In certain infections of the kidney, sulfanilamide does give results. As I said before, I think it is a remarkable drug, but must be used cautiously.

Dr. Val H. Fuchs: I am convinced that this drug has its place in certain conditions of nose and throat work but to use it promiscuously should be condemned. I have seen cases of true streptococcal infection that respond beautifully to sulfanilamide, particularly is this true in streptococcal otitic meningitis. What damage it will produce in the future it is too early to say but after seeing its results in true streptococcal infections I do not hesitate to use and recommend it.

Dr. J. W. Tedder: Sulfanilamide dermatitis occurs as toxic manifestations in a few susceptible individuals. The condition is not dangerous because it clears promptly upon discontinuing the drug. It is thought that sulfanilamide possibly has a photosensitizing effect on the skin because the dermatitis is most marked on the parts exposed to sunlight. There is possibly an increased amount of hematoporphyrin in the blood of patients taking sulfanilamide. The microscopic sections of the morbilliform eruption, characteristic of this drug, show no diagnostic changes.

Dr. P. B. Salatich: I have used this drug and had some result and again no result. I can talk very well of subacute and chronic gonococcic infection in the female. All have been cleared in two weeks time. They tell you not to use it in pregnant women. I have used it in pregnant women and had no bad results. I do not know of any cases that are worse than a child to be delivered in a gonococcus infected woman.

Dr. E. H. Walet: With reference to the gynecologic aspect of this discussion: Two patients with acute pelvic inflammatory disease came to

my service in Charity Hospital—one postpartal septicemia, acute; the other, acute recrudescence of old infection, probably of the same origin—both having chills and high temperature. Treatment instituted in both instances consisted of blood transfusion, two in one case, three in the other; sulfanilamide in ten grains t.i.d. and later continued in five grains t.i.d. seemed to have contributed very substantially in the clearing up process involving a period of about three weeks.

HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Neurosurgery, Dr. D. H. Echols presiding, on Convulsive Disorders Due to Organic Diseases of the Brain.

Diagnostic Significance of Certain Types of Convulsive Disorders (Dr. L. A. Golden, Division of Psychiatry): The term epilepsy is rapidly losing its meaning in the old restricted sense in which it had been applied. This change was dictated by a realization that convulsive seizures in general were essentially indistinguishable from each other in many respects. The very fact that many types of convulsive seizures, loosely called epilepsy, occur in a wide variety of apparently unrelated medical disorders has tended to popularize the term convulsive seizure, in preference to epilepsy. The convulsive seizure is regarded by present-day students of the nervous system as a non-specific discharge reaction, possibly even as normal physiological phenomenon. In clinical practice the convulsive disorders, formerly termed epilepsy, tend to fall into two primary divisions. In one group no recognizable pathologic change has been identified as responsible for the appearance of the seizure, and this group is termed idiopathic, or essential, to indicate its unknown origin. In the second group are included convulsive seizures for which an apparent precipitating cause has been determined, and this has been termed symptomatic epilepsy.

During the recent years, by means of newer methods of investigation, many of the so-called essential epilepsies have been placed in the symptomatic group; for example, convulsive seizures due to Adams-Stokes disease, spontaneous hypoglycemia, or carotid sinus disease have recently been recognized. Despite a tremendous amount of modern scientific effort directed at the elucidation of the riddle of epilepsy, and despite its conjoint scrutiny by scientists gathered in an international league for the study of epilepsy, many important factors remain unsolved. There is, however, increasing optimism due to apparent strides made in our knowledge by the development of newer methods of investigation. Contemporary interest has been focused, for example, on the relationship of water balance to the convulsive seizure. A great deal

of information is also expected from the new encephalographic investigations, which measure changes in the electrical potential of the brain, very much as the electrocardiograph does in the heart. Special care must be used in relating such findings to the cause of epilepsy, since there is always the danger of ascribing an important role to the sound made by an engine, rather than to the workings of the engine itself.

When we turn to the focal epilepsies, we are on somewhat firmer ground, at least as to the precipitating cause, since gross pathology of the brain can usually be found in association with such seizures. We owe our understanding of the focal seizures to the genius of Hughlings Jackson and his brilliant studies. He described and recognized the localizing significance of certain types of convulsive phenomena, which are called Jacksonian seizures. The Jacksonian, or focal seizure, is characterized chiefly by its slow onset and spread, its identical beginning in each repetition of the seizure, its march according to the representation anatomically of certain patterns of movement and sensation in the cortex. Consciousness is usually retained. While the seizure may remain localized to a small part, such as the face, the arm, or only one side of the body, it may at times progress to the other side and end in a generalized convulsion with loss of consciousness. Thus, a typical Jacksonian seizure, if it begins in the foot, would march progressively to involve the ankle, the knee, the abdomen, the chest, the shoulder, the arm, the forearm, the wrist, the fingers, the thumb, the face, and the tongue.

The types of organic defect, usually found in association with focal seizures may be grouped as follows: (1) Local atrophies, with or without meningeal adhesions (porencephalies); (2) congenital malformations of various types, including variations in number, size and architecture of the convolutions and other parts of the brain; (3) various anomalies of the cortical vessels, venous aneurysms, and angiomas; (4) other evidences recently revealed by encephalography and ventriculography, which include gross acquired lesions, such as tumor, abscess and results of hemorrhage and thrombosis; (5) results of degenerative diseases, such as Schilder's disease, the abiotrophies, epiloia, and related disorders.

Of special interest in relation to focal seizure is a condition known as Todd's paralysis. Dr. Todd described a temporary paralysis affecting a part of the body convulsed in a Jacksonian seizure, which gradually disappears in a few hours. The clinical value of recognizing a Todd's paralysis lies in its indication that a gross pathologic lesion has precipitated the seizure.

Ordinarily, the clinical appearance of all seiz-

ures if generalized is quite similar. Explosive discharges may occur at any level of the central nervous system, and may bear the imprint of the anatomic area in which they originate. Thus, there may be: (1) Tonic-clonic seizure, or petit mal; (2) sensory seizures, consisting of gustatory, olfactory, or visual hallucinations; (3) crude occipital lobe discharges; (4) explosive emotional reactions, such as those that occur in lethargic encephalitis; (5) so-called tonic fits, originating from the cerebellum (Kinnier Wilson) or from the basal ganglia region (M. R. Walshe); (6) oculogyric crises from midbrain discharge; (7) vasovagal attacks from the bulbar mechanism; (8) the discharge of spinal segments, probably represented by the mass reflex.

I shall now discuss the special characteristics of a focal seizure originating from the frontal lobe in the region of the ascending frontal convolution. If the focal seizure begins with the involvement of the leg, then it progresses slowly and characteristically to convulse the foot, ankle, knee, abdomen, chest, shoulder, arm, forearm, wrist, fingers, thumb, face and tongue. If it begins in the face, the progression is in the reverse order. It may stop anywhere in its progression, or may spread across to involve the other side of the body.

If the seizure begins near the base of the middle frontal convolution (area six of Brodman), conjugate movements of the head and eyes to the side opposite the lesion initiates the seizure.

Foerster claims that discharges arising in area six (Brodman) produce mass movements on the opposite side of the body involving all the muscle groups simultaneously, as follows: The arm is abducted at the shoulder, flexed at the elbow, flexed or extended at the wrist and finger joints. The leg is usually extended at all joints. The head and eyes are rotated to the side of the convulsion and the trunk is rotated strongly in the same direction.

Parietal lobe discharges originating in the ascending parietal convolution are characterized by sensations of tingling, burning, numb feeling, or hot and cold sensations, as well as formication. At times such feelings are the only manifestations of an attack, but if they spread to the motor area, local or generalized convulsive movements may also appear. Sittig has noted that when a discharge is strong, the sensations do not "march" in the anatomic order represented in the cortex.

Temporal lobe discharges are of especial interest and Hughlings Jackson first drew attention to discharges of this type. Frequently, seizures originating in the temporal lobe produce a subjective state which patients describe as "dreamy." They often say, "I knew I was not asleep, but still I was not awake." There may be a feeling of terror or

apprehension. As one of our patients states, "Things seem different and yet very familiar." There may be a strong feeling that one has passed through the same experience before. Strange odors, vile smells, gustatory sensations and noises of all types have been frequently described in such instances. Elaborate pictures of animals or persons may be repeatedly experienced at the beginning of each attack. For instance, a patient I saw demonstrated by Kinnier Wilson stated that preceding each seizure, she would sink into a "dreamy state" in which she "saw herself as a little girl, sitting in a room. An old woman would open the door, approach her, pat her on the head and walk out. The whole experience had a strange but vividly familiar quality." Such sensations may constitute the entire attack, or be the prelude to a general convulsion. The olfactory and gustatory sensations are attributed to irritation of the uncinate gyrus. The following two cases recently studied illustrate the practical application of these descriptions to clinical diagnosis.

CASE REPORTS

A. R., a man of 23, suffered an injury about his face, and was knocked unconscious in an automobile accident in April, 1937. After surgical repair he was discharged with no complaints. Five months later, he accidentally tripped and fell on the back of his head, was slightly dazed and his eyes felt "blurry." He suffered no apparent ill effects until about two weeks later, when he occasionally felt "like pressure in the head," vague pain over the left or right orbital bones. He improved, however, during the next two months. In November, he noticed transient tingling in his left hand. He described in addition the recent onset of an experience which he called "a goofy dream." When sitting quietly, he felt as if he were not quite awake, yet he knew he was not asleep. At such times, he would hear someone calling him by name, and he would awaken himself by shouting, "What, what, who is it?" In these episodes he would feel definitely frightened. At this time, he had examinations of his fundus and some changes were interpreted as probably being optic neuritis, possibly on a toxic or infectious basis. It was recommended that his teeth be removed. His family physician recognizing the possibility of a neurologic disorder referred him for neurologic examination. The positive findings were a moderate choking of both optic discs and a relative inability to discriminate between one or two points on his left leg, as compared to his right. Because of the history of injury, a diagnosis of tumor of the left temporal parietal area was proposed, the nature of the tumor was expected to be a subdural hematoma. The localization was made on the basis of the dreamy state with auditory hallucinations which he de-

scribed and the slight findings in his left leg. Dr. Echols saw the patient in neurosurgical consultation, and after a ventriculogram operated and found a temporoparietal extradural tumor, which was removed with little difficulty.

H. M., a healthy appearing girl of ten, was referred to the Child Psychiatry Clinic with the following history: She had been well until a year and a half previously, when her parents first noticed "spells." These consisted of sudden turning of the eyes and head to the right, loss of consciousness and falling to the left. Occasionally she stiffened out, but usually showed no tonic or clonic movements. With the onset of these spells, the child complained of occasional headaches and nausea. The patient herself stated that she was warned of the attack by a feeling of strangeness and "the kitchen would get larger and larger, everything else smaller. It was like something I had done before, but very funny; I can't explain it." The same experience usually preceded each seizure. On the basis of the history and the description of the attack a tentative diagnosis of left temporal lobe tumor was made. Further neurologic investigation revealed a right homonymous hemianopsia. There were no other neurologic findings. The case was referred to Dr. Echols, who did an encephalogram, which revealed that the left cerebral hemisphere was markedly atrophic. This finding explained the adverse movements of the eyes, the "dreamy" state episodes, and the seizures. Dr. Echols will demonstrate the roentgen ray films of both of these cases.

Occipital lobe attacks produce, in contrast to the elaborate hallucinations of the temporal lobe, crude visual sensations. These arise from lesions involving the primary visual centers around the calcarine fissure. They are most often flashes of light, splashes of color, scintillating scotomata. These are projected to the visual field of the opposite side. A case to be presented tonight by Dr. Echols shows such attacks described as "black lights," due to cortical atrophy of the occipital lobes, following head injury.

Some Congenital Anomalies of the Brain (Dr. Harold Cummins, Department of Anatomy): The reference to "organic disease" in the title of this symposium will call to mind some of the evidence of frank disease processes or trauma which may be demonstrable in the brains of persons suffering from convulsive disorders. Prominent among such lesions are cerebral softening, hemorrhage, meningitis, tumor, hydrocephalus, depressed fracture. Many others might be listed. The subject assigned to me is a single class of cerebral affections, the congenital anomalies. Brain tumor, tuberous sclerosis, gliosis and other phases of essential pathology which may appear congenitally are thus excluded.

Many cerebral anomalies (e.g. anencephaly) have no direct practical importance because the infants are non-viable, surviving but a few hours or days at most. Among the anomalies in which survival is possible, there is hardly one which has escaped record as an occasional or frequent associate of convulsive disorder, including scaphocephaly, oxycephaly, microcephaly, cerebral hemiatrophy, agyria, microgyria, pachygyria, heterotopias, porencephaly, or hydrocephaly. (These defects were characterized and specimens demonstrated).

It is significant that a brain which is defective at all commonly shows multiple anomalies. The following considerations are of importance in the explanation of this general tendency.

First, the nervous system in its differentiation displays a highly complex integration of structures which are functionally interrelated. Thus, for example, deficiency or absence of a cerebellar hemisphere is accompanied by suppressed development of centers which normally would have established functional connections with that portion of the cerebellum, notably the inferior olivary nucleus of the opposite side. Correlated maldevelopments of this nature arise through the interplay of mutually regulatory developmental processes. In many instances it would be difficult to identify the aberration which initiated the sequence of abnormalities.

The second consideration applies to cases in which the two or more brain anomalies involve parts which are not functionally related in the manner just noted. In the brain of one epileptic idiot, to cite a case, there occurred: (1) Occlusion of the aqueduct of Sylvius, with internal hydrocephaly; (2) nodules of heterotopic cortex bordering the lateral ventricles; and (3) abnormal arrangement of the cortical layers and signs of immaturity of cortical neurones. In an instance such as this it is, of course, possible that the joint defects illustrate a different variety of developmental succession; it might be suggested that hydrocephaly existed during the critical period of cortical differentiation in the middle trimester of pregnancy, introducing mechanical impediments to the proper proliferation, migration and grouping of the cortical elements. But to illustrate cases of a still different category, where at least some of the maldevelopments are more clearly independent, the defects typically associated with agencies of the corpus callosum may be mentioned. These are: Polygyria, embryonic arrangement of sulci, absence of olfactory nerves and partial separation of the frontal lobes. Why is it, in these and similar instances, that multiple defects occur? The answer to this question is not yet at hand, but there are suggestive evidences that the situation is not different in principle from the frequently combined occurrence of other bodily anomalies. Indeed,

among epileptics various growth disorders, including asymmetries, disproportions and anomalies involving skeleton, primary and secondary sex characteristics, fat distribution and the like are not uncommon; in Wertham's series 26 per cent of the cases exhibited stigmata of this order. Then comes the question of whether convulsive disorder in individuals having developmental defects of the brain is directly assignable to one or another of the specific defects which are present. Certain developmental defects of the brain appear to have the same potentiality of modifying cerebral discharge as the lesions of disease or trauma. A cerebral area characterized by agyria or microgyria might be a source of embarrassed cortical function in the manner of the corresponding area in a normal brain when subjected to the effects of a focal lesion. Likewise the primarily developed porencephaly supplies a background of pathology closely akin to that of the secondary pseudo-porencephaly, and so on. Still, it must be kept in mind that the very existence of these major defects implies a history of a widely pervading disturbance of cerebral differentiation by which still other factors may have been introduced.

The Electroencephalogram in Relation to the Epilepsies (Dr. M. I. Tuchler, Division of Psychiatry): The term electroencephalograph was coined by Burger in 1929 and is now generally used to describe the record of changes in electrical cortical potential. The origin of currents, what cells are responsible for the potential changes, is not known. The oscillations represent bio-electrical phenomena which accompany all nerve processes at rest and during activity. The electroencephalogram represents the electrical phenomena accompanying cortical activity in the same manner that the electrocardiogram represents the antecedent and accompanying phenomena of the contracting heart.

The technic of electroencephalography is similar in principle to that of electrocardiography. Electrodes are placed on or in the scalp and leads are taken from the surface of the scalp or perosteum, depending upon whether the surface or needle electrodes are used. Cortical potentials are led off and amplified by means of separate vacuum tube amplifiers. These potentials vary from five millionths to one one-thousandth of a volt, values a thousand times weaker than those used in electrocardiography. The latter will energize a quartz string galvanometer without amplification; the former demands amplification. Interference due to extraneous electrical pick-up is eliminated by completely shielding both the patient and the apparatus in a metal-screened room. The electrical phenomena of the heart-beat are overcome by grounding the body of the patient.

The amplified cortical potentials are recorded

with a cathode ray oscillograph upon a bromide paper by photographic means, or are recorded by electromagnetic or dynamic mechanical inkwriting pencil upon paper or tape. The frequencies of the cortical waves vary between one and two hundred cycles per second. Since the usual run of cortical frequencies rarely exceeds sixty cycles per second the mechanical recorder is satisfactory; indeed, the lack of sensitivity or response to those higher frequencies is somewhat of an advantage in eliminating the electrical response coincident with muscular contraction. The latter introduce considerable distortion into electroencephalogram, and violent muscular contractions destroy the characteristics of the much fainter cortical pattern. The degree of amplification and the frequency response are capable of variable control. An adequate apparatus demands at least four to six individual and separate amplifiers for the simultaneous recording of separate and symmetrical cortical areas.

The most obvious components of the electroencephalogram are the so-called alpha waves of Burger which consist of variations in electrical potential at a rate of ten per second. These frequencies are constant for the individual. The alpha waves are found when the subject is at rest with eyes closed and mind free of random thoughts. When the eyes are opened the alpha waves are nearly always abolished, and reading causes the waves to disappear. Adrian (1934) demonstrated that these waves took origin in the occipitoparietal region of the cortex, and thus have been related to vision. Rest augments the alpha rhythm; it is usually stopped completely by intense mental or physical concentration. This cessation of alpha rhythm affords an only known correlation between cortical waves and states of the mind. Adrian and Matthews feel that the alpha rhythm is suggestive of physiological rest. It is interesting to note that there are no electroencephalographic changes recorded in schizophrenia, to date.

The second type of waves was also described by Burger and are now called beta waves, or rhythm. These waves are found in the frontal areas, are smaller in magnitude than the alpha waves, and their rhythm is about ten to twenty-five per second. Various portions of the frontal lobes give variations of this type of wave form.

A third wave form has been described by Jasper and Anderson. This gamma form is recorded at a frequency of about fifty cycles. Nothing is known of its detailed structure.

From these studies it has been demonstrated that the brain is the site of a constant, rhythmical activity, although comparable to the activity of the heart and the respiratory system.

A petit mal attack is characterized by the appearance of large sinusoidal waves followed by spiked negative deflections persisting throughout

the attack at a rate of about three per second. The voltage swing is twenty times the normal amplitude. These bursts of activity may occur without subjective or objective evidence of a seizure in some patients, and these are known as threshold or larval disturbances. Such a typical sinusoidal curve is considered pathognomonic of petit mal.

Grand mal seizures may follow petit mal attacks. The grand mal wave form is characterized by rapid waves of ten to thirty per second which, unlike petit mal waves, increase in amplitude as the seizure progresses, become spiked in character, and clumped as the tonic phase appears. With the clonic phase the wave pattern becomes slower, intermittent, and diminished in magnitude. As the stupor appears, the waves resemble the slow and flat curves of deep anesthesia or sleep. With recovery from stupor, faster waves appear. In status epilepticus, as soon as an approximately normal level is reached, the seizure is repeated.

Both the petit and the grand mal types of wave patterns may appear in the same patient and may blend in a progressive manner, as frequently does the petit and grand mal disorder. Clinically, the characteristic wave pattern of grand mal is, in contrast to that of petit mal, subject to marked individual variations. In the exceedingly fast outbursts of activity, muscles remain in tonic contraction; the clonic movements begin as slower waves appear until the normal wave (for the individual) is reached. In the main, the electroencephalograph substantiates Hughlings Jackson's statement that rigidity, or tonic spasm, is clonus "run together."

In Jacksonian variations, and in frontal atrophy, the abnormal rhythm is frequently confined to the frontal or motor lobes alone. Cerebral neoplasms are also demonstrated by variations in electrical activity.

Gibbs and Lennox believe that "Epilepsy is a disordered functioning of the rate regulating mechanisms of the brain", and have coined the term "paroxysmal cerebral dysrhythmia" to describe the condition. They believe that grand mal is characterized by an acceleration of the activity of the cortex; petit mal characterized by an alternate slow and a spiked discharge, and the "psychomotor attack" or epileptic equivalent by a composite wave form. The shift from the normal to the slow or the faster rhythm Lennox considers the basic disorder in the convulsive state.

Encephalography: Presentation of Cases (Dr. D. H. Echols, Division of Neurosurgery): The first case discussed tonight by Dr. Golden was that of a young man who had temporal lobe fits, headache, and choked discs. The ventriculograms which you see here verified the clinical diagnosis of a tumor in the region of the temporal lobe. You will note that the lateral ventricles, third ventricle and

right temporal bone have been pushed to the left by the tumor. The tumor proved to be extradural and was completely removed.

The little girl presented by Dr. Golden had temporal lobe attacks, emotional disturbances and homonomous hemianopsia. You will note that the ventriculograms do not agree with the clinical diagnosis of tumor of the temporoparietal region, but demonstrate an atrophy of this part of the brain.

I would like to introduce this man who came to us because of generalized epileptic attacks. His trouble is the result of a severe head injury sustained one and one-half years ago. You will note that his encephalogram shows mild atrophy of one cerebral hemisphere. The patient, who is taking phenobarbital and limiting his fluid intake, is now free of symptoms.

In conclusion, I wish to urge that more use be made of encephalography as a diagnostic procedure. The method is available to infants and children as well as to adults. It is simple to perform and is almost without danger. You might well ask what is gained by making an anatomic diagnosis in children who are feeble-minded, epileptic or spastic. I feel very strongly about the answer. Hundreds of such children are taken from doctor to doctor and from city to city in a search of a word of hope or a positive diagnosis. This is carried on until the resources of the parents are exhausted. If an encephalogram is made the exact condition of the brain can be demonstrated to the parents. It then becomes easy for them to understand the uselessness of seeking surgical aid for such conditions as brain atrophy, congenital anomalies, communicating hydrocephalus and porencephalic cyst.

GRADUATE SCHOOL
LOUISIANA STATE UNIVERSITY
MEDICAL CENTER
New Orleans

The scientific meeting of April, 1938, was called by Dr. James T. Nix, Dean of the Graduate School. Doctor J. Shumard George presented the following paper:

SOME POINTS IN TREATMENT
OF CANCER OF THE CERVIX

In the treatment of cancer of the cervix in general, irradiation is used. This, it is believed, gives the best results in the majority of cases.

Very frequently we are faced with the problem of a large, obese patient who has borne children, and has borne children, and has a cauliflower mass at the cervix which proves to be malignant. In the past we have been forced to rely on radium inserted into the cervical canal to a large extent, because the thickness of the body tissues diminishes the R-units delivered to the parametrium to

to such an extent that it seems hardly practical to use it at all. The patients were exposed to large skin doses of roentgen ray but the amount reaching the region to be treated was far from sufficient to deliver a lethal dose to the cancer cells. Now we are trying another method in the treatment of these patients with somewhat better results than previously, although the time is insufficient to give any definite statistics.

Dr. Cooper of the Department of Radiology of Charity Hospital was the first to suggest and try the use of vaginal roentgen ray in the Tumor Clinic. It has been used before both abroad and in this country, but of recent years little has been done in this locality by this method.

There are definite advantages to this method, and quite definite contraindications. The contraindications are:

1. A nulliparous vagina, or any stenosis of the vagina, precludes the use of the pyrex glass speculum.
2. A patient having considerable bleeding can not be treated because the insertion of the speculum may aggravate the bleeding.
3. In cases in which the disease definitely involves the parametrium, we can not hope to reach this area as readily through the vagina as by the abdominal route.

The advantages are quite as definite with this method as we can treat obese patients by roentgen ray who could not be treated otherwise. We can treat the large cauliflower masses, causing them to diminish in size, and at the same time cutting down the infection so that radium can be applied with less chance of reaction.

The roentgen ray to the cervix delivered through a pyrex speculum is not very irritating to the mucous membrane, and although the position we have been using, that is, the knee chest position, is not comfortable, the reaction to the irradiation does not seem to be as great.

This is not a new way to treat carcinoma of the cervix, but it is an aid in certain patients whom, prior to its use, we were unable to treat satisfactorily. We are having some excellent results now, but only a large number of patients treated over a long period of time will prove its value. The preliminary results are gratifying in that the size of the cancer diminishes rapidly, the mucous membrane shows no ill effects, and the epithelial reaction of the lesion is rapid.

FACULTY CLUB
LOUISIANA STATE UNIVERSITY
SCHOOL OF MEDICINE

The February meeting of the Faculty Club of Louisiana State University School of Medicine was held on Friday, February 18, 1938 at 8 p. m. in the Medical Center Science Bldg.

Dr. Earl Conway Smith of the Department of Obstetrics and Gynecology presented the following subject:

THE CLINICAL EFFECTS OF CAMPHOR-IN-OIL UPON LACTATION; A PRELIMINARY REPORT

In 1929 it occurred to me that if camphorated oil, by applications directly to the breast, would help relieve engorgement or favor involution, then it possibly would be of value when administered hypodermically. Experiments were begun then and are being continued at the present time.

This series consists of 96 selected cases from a total of 2054 confinement cases, with the following indications for interference with lactation:

1. Stillborn	74
2. Weaning	8
3. Cardiac disease	4
4. Collapse	3
5. Anemia	3
6. Polygalactia	2
7. Unwed mother	1
8. Mastitis	1

96

For convenience, engorgement of the breasts was classified according to degrees of severity and treatment was instituted accordingly.

The outline for dosage of camphor-in-oil, given intramuscularly:

	A. M.	P. M.
First day	3 gr.	3 gr.
Second day	3 gr.	3 gr.
Third day	3 gr.	-----
Fourth day	3 gr.	-----

Series of 25 cases was used as control to obtain the normal lactation curve. When a comparison was made between the normal lactation curve and

that obtained in the series following the use of camphor-in-oil, it was found that the quiescent, or non-lactating, stage was reached in two to four days in place of the usual four to six days.

CONCLUSIONS

1. Camphor-in-oil is the most effective method to suppress lactation, partially or completely.

2. Pain due to engorgement is relieved in eight to twelve hours following the first injection.

3. The sooner the injections are given post-partum, the quicker the relief and more effective is the action.

4. No unfavorable reactions were noted in this series.

5. Although reports in the literature upon experimental animals are both for and against the efficacy of camphor-in-oil to check lactation, clinically it has proved of great value whatever may be the theory of action.

A STUDY OF WASSERMANN-FAST SYPHILIS WITH AN EVALUATION OF THERAPEUTIC MEASURES

Dr. James K. Howles of the Department of Dermatology and Syphilology presented the paper which will be published elsewhere.

Dr. W. Branks Stewart of the Department of Medical Art presented the following:

SOME PROBLEMS IN MEDICAL ART

A discussion of the problems in the field of medical illustrating, with particular reference to planning the work to suit its purpose, conveyance of the essential information, execution and choice of a suitable medium, reproduction, and a pointed classification of the individuals whose cooperation, or lack of it, enlivens the day of the medical artist.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

May 2.	House of Delegates, Louisiana State Medical Society, 9:30 a. m.
May 2.	Board of Directors, The Orleans Parish Medical Society, 8 p. m.
May 2.	Pathologic Conference, Hotel Dieu, 8:15 p. m.
May 3.	Louisiana State Medical Society, 9 a. m.
May 3.	Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.
May 4.	Louisiana State Medical Society, 9 a. m.
May 4.	Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
May 4.	Mercy Hospital Staff, 8 p. m.
May 4.	Hutchinson Memorial Clinic Staff, 8 p. m.
May 5.	Clinicopathologic Conference, Touro In-

firmary, 11:15 a. m. to 12:15 p. m.

May 9.	THE ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
May 11.	Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
May 11.	Woman's Auxiliary, Orleans Club, 3 p. m.
May 11.	Touro Infirmary Staff, 8 p. m.
May 13.	French Hospital Staff, 8 p. m.
May 16.	Hotel Dieu Staff, 8 p. m.
May 17.	Charity Hospital Medical Staff, 8 p. m.
May 18.	Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
May 18.	Charity Hospital Surgical Staff, 8 p. m.
May 19.	Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

- May 19. Eye, Ear, Nose and Throat Club, 8 p. m.
- May 20. I. C. R. R. Hospital Staff, 12 noon.
- May 20. New Orleans Dispensary Staff, 8 p. m.
- May 23. THE ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.
- May 24. Baptist Hospital Staff, 8 p. m.
- May 25. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
- May 26. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- May 27. L. S. U. Faculty Club, 8 p. m.

During the month of April, the Society held one joint quarterly executive meeting and one regular scientific meeting. Reports for the first quarter, 1938, were read at the meeting of April 11. Papers were read as follows:

Deuteroproteose and Specified Serum in the Treatment of Pneumonias.

By:.....Dr. Clyde Brooks
Discussed by Dr. John Signorelli.

Protamine Insulin in the Treatment of Diabetes Mellitus.

By:.....Dr. Manuel Gardberg
Discussed by Dr. P. H. Jones and closed by Dr. Gardberg.

Some Fractures of the Upper Extremity (A newer method of demonstrating fundamental principles of treatment): Motion Picture.

By:.....Dr. H. Theodore Simon

At this meeting Drs. J. W. Cirino and Maurice J. Gelpi were elected to Honorary Membership.

At the meeting of April 25, the following program was presented:

The Present State of Insulin and Metrazol Treatments of Schizophrenia.

By:.....Dr. Erwin Wexberg
Discussed by Dr. Walter J. Otis.

The Chronicity of Tuberculosis.

By:.....Dr. Sydney Jacobs
Amebic Abscess of the Liver.

By:.....Dr. Edward A. Ficklen
Discussed by Dr. M. E. DeBakey.

A resolution was adopted definitely protesting against newspaper articles being signed by members of the Society.

Radio programs, sponsored by the Orleans Parish Medical Society, are held every Friday from 8 to 8:15 p. m. over Station WDSU. Members desirous of making talks are requested to communicate with Dr. M. M. Hattaway, chairman.

The following doctors were elected to active membership: Drs. George E. Barnes, Guy A. Cald-

well, Vincente D'Ingianni, Fred King Vaughan, and M. Carl Wilensky.

NEWS ITEMS

At the recent election of officers of the Lighthouse for the Blind, Drs. J. M. Koelle and Julius E. Isaacson were named honorary presidents, and Drs. A. Mattes and Monte F. Meyer appointed to the board.

Dr. N. K. Edrington was nominated for the presidency of the Alcee Fortier High School Cooperative Association, March 8.

Dr. T. A. Watters attended the celebration of the twenty-fifth anniversary of the Henry Phipps Psychiatric Clinic, of Johns Hopkins Hospital, in Baltimore. Following this he attended the Thomas W. Salmon memorial lectures in New York City.

Dr. Charles J. Bloom conducted a refresher course in pediatrics in Baton Rouge, March 14-18.

At the Third District Medical Society meeting, March 16, in New Iberia, were Drs. N. K. Edrington, Allan Eustis, J. T. Nix, Neal Owens, C. L. Peacock, and Paul T. Talbot.

Dr. Peter Graffagnino spoke on "Endometrial Biopsy Studies in Gynecology" before the Harris County Medical Society in Houston, March 23.

Drs. H. H. Beard, Edgar Hull and E. A. Socola presented papers at the March meeting of the Faculty Club of Louisiana State University School of Medicine.

Attending the Alexandria Medical Seminar group, March 30, were: Dr. Michael DeBakey who spoke on "Blood Transfusion"; Dr. Edgar Hull who spoke on "Remedial Heart Disease"; and Dr. J. Ross Veal who spoke on "Postoperative Edema of the Arm and Primary Thrombophlebitis."

Dr. Thomas Benton Sellers sailed March 30 for Europe to attend the meeting of the International Congress of Obstetricians and Gynecologists in Amsterdam. Dr. Sellers will visit clinics in the principal cities of Europe before the meeting.

Dr. D. H. Echols spoke March 31 before the Fifth District Medical Society in Atlanta. His subject was "Surgical Treatment of Hypertension."

Dr. John H. Musser attended the meetings of the American Board of Internal Medicine, April 1-2, and the American College of Physicians in New York City, April 4-8.

Dr. Alton Ochsner attended the American Association for Thoracic Surgery meeting, April 4-6, in Atlanta, where he spoke on "The Operative Correction of Pectus Excavatum."

Dr. Walter J. Otis spoke April 4 before the Catholic Youth Conference.

Dr. Lucien A. LeDoux addressed the New Orleans High School Teachers Association, April 5, on the necessity for normal scholastic advancement for a girl in her teens.

Attending the meeting of the American College of Physicians in New York City, April 4-8, were Drs. Oscar Blitz, George M. Decherd, Grace Goldsmith, Edgar Hull, Louis A. Monte, John H. Musser, Carlo Tripoli, and Willard R. Wirth.

Dr. Edwin Socola conducted a refresher course in pediatrics in Eogalusa, April 4-9.

Dr. C. C. Bass attended the dedication ceremonies at Louisiana State University, April 7, as official delegate of the American Academy for the Advancement of Sciences.

Dr. A. J. Hockett spoke before the Southeastern Hospital Conference in Birmingham, April 7-9.

On April 10, Dr. Murrel Kaplan spoke on "Diets in Stomach Disorders" before the Louisiana State Dietetic Association.

Dr. Dean H. Echols spoke on "Brain Tumors" and Dr. Mims Gage on "Infections of the Hand" before the Calhoun County Medical Society, April 12, at Anniston, Alabama.

Dr. John H. Musser addressed the Delta Medical Society in Rosedale, Mississippi, April 13, on "The Treatment of Pneumococcic Pneumonia."

Dr. Wilbur C. Smith and Dr. Marie B. Dees-Mattingly attended the semi-centennial meeting of the American Association of Anatomists in Pittsburgh, April 14-16.

Attending the Mississippi State Medical meeting in Jackson, April 19, were Dr. Isidore Cohn and Dr. Leon J. Menville who presented a paper on "Carcinoma of the Cervix."

At the Alabama State Medical Society meeting in Mobile, April 19-21, were Dr. Oscar Bethea who spoke on "The Pneumonias"; and Dr. John H. Musser who talked on "Treatment of Organic and Inorganic Disease of the Stomach."

TREASURER'S REPORT

Actual book balance: 2/28/38:.....	\$4,569.02
March credits:.....	\$1,365.42
Total credits:.....	\$5,934.44
March expenditures:.....	\$1,081.58
Actual book balance: 3/31/38:.....	\$4,852.86

LIBRARIAN'S REPORT

During March 62 volumes have been added to the Library. Of these, 19 were received by gift, 28 by binding, 1 by purchase and 14 from the New Orleans Medical and Surgical Journal. The Library has loaned to doctors during March, 987 volumes or almost two to each member of the Society. In addition, 1098 have been loaned to students for overnight use, making a total of 2085 for the month. These figures do not include the great use of books and journals within the Reading Rooms.

Members of the staff have collected material on the following subjects during March:

- Dermatitis from sulfanilamide.
- Famous misconceptions of disease in medieval history.
- Angioneurotic edema.
- Treatment of pneumonias.
- Ocular manifestations of osseitis deformans.
- Geriatrics.
- Rheumatic fever in infants and children.
- Tuberculosis of the skin.
- The blind and the insane in Louisiana and the United States.
- Psychoanalysis in alcoholism.
- Psychopathic constitutional inferiority.
- Calcification of hematomas.
- Treatment of myasthenia gravis with prostigmin.
- Rheumatic heart disease.

NEW BOOKS

A. M. A.: Section on Laryngology, Otology and Rhinology Transactions, 1930, 1931 and 1932.

Padgett, E. C.: Surgical Diseases of the Mouth and Jaws, 1938.

Galdston, Iago: Maternal Deaths and the Ways of Prevention, 1937.

Merritt, H. H.: Cerebrospinal Fluid, 1937.

Helmholtz, Hermann von: On Thought in Medicine, 1938.

Wolf, G. D.: Physicians' Business, 1938.

Magner, William: Textbook of Hematology, 1938.

Rooyen, C. E. von: Muir's Bacteriological Atlas, 1937.

Geckeler, E. O.: Fractures and Dislocations for Practitioners, 1937.

Glaister, John: Medico-legal Aspects of the Ruxton Case, 1937.

- DeLee, J. B.: *Obstetrics for Nurses*, 1937.
 Kerr, J. M. M.: *Operative Obstetrics*, 1937.
 McKee, G. M.: *X-ray and Radium Treatment of Diseases of the Skin*, 1938.
 Weiss, H. B.: *Manual of Clinical and Laboratory Technic*, 1937.

American Neurological Association Transactions, 1937.

Pohle, E. A. (ed.): *Theoretical Principles of Roentgen Therapy*, 1938.

Gilbert C. Anderson, M. D.,
 Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS



JOSEPH ALOYSIUS O'HARA
 THE NEW PRESIDENT

Joe O'Hara, as he is known throughout Louisiana, among his professional brethren, as well as to the thousands of his lay friends, was born in 1869, the son of Joseph O'Hara and Anna Norris O'Hara. His early life was spent in the rear of the Garden District of New Orleans, where he later practiced pharmacy.

O'Hara's ambition, however, was to become a family doctor, and he entered Tulane School of Medicine, where he obtained his Medical Degree in 1900. For many years he has been engaged in the very active practice of medicine, principally as a typical family doctor.

In 1904, Dr. O'Hara was elected Coroner of the Parish of Orleans, a position which he held for twenty years. In the conduct of this office, Dr. O'Hara attained much fame for his human and practical handling of the cases brought to his official attention, particularly those of the insane.

In 1928, Dr. O'Hara was made President of the State Board of Health. During his terms of office, which he is still filling, a tremendous expansion and increased activity have occurred in the work

of the Board. The full time health services have been extended to practically every parish in the state, and in these services, as well as in other fields of endeavor, the rights and privileges of the doctor always have been jealously and loyally protected.

As ex-officio Chairman of the Tuberculosis Commission of Louisiana, as well as in his private capacity as a doctor and citizen, Dr. O'Hara has given unstintingly of his thoughts, time and money to the extension of facilities for the care of the tuberculous.

Dr. O'Hara is one of the few physicians, still active, who has had actual clinical experience with yellow fever. In addition, in 1905, when the last campaign against Yellow Jack was carried on in New Orleans, he was actively in charge of the tenth ward association, as its president.

During the World War, Dr. O'Hara was engaged in medical work with the Selective Draft Board.

Dr. and Mrs. O'Hara reside at 2311 St. Charles Avenue, and she and two children, Judge Wm. O'Hara and Mrs. Hugh LeBlanc as well as several grandchildren, help to offer a happy buffer to the difficulties with which a busy public official has to contend.

We feel that Dr. O'Hara will bring all of his many talents to full fruition as President of the State Society, and wish him every measure of success.

SIXTH DISTRICT MEDICAL SOCIETY

The semi-annual meeting of the Sixth District Medical Society was held Thursday, April 21, at the Baton Rouge General Hospital. The scientific program included two papers: "Surgical Anatomy of the Gall Bladder with Observations" was presented by Dr. Emmett Irwin of New Orleans; "Hemangioma of the Colon" was presented by Dr. W. H. Cook of Baton Rouge.

Among the guests at the meeting were Drs. P. T. Talbot and C. L. Peacock of New Orleans.

The following officers were elected for the coming year:

President: Dr. J. L. Beven, Baton Rouge.

Secretary-Treasurer: Dr. H. A. Folse, Donaldsonville.

Delegate: Dr. E. M. Robards, Jackson.

J. L. Beven, M. D., Pres.

TANGIPAHOA PARISH MEDICAL SOCIETY

The Tangipahoa Parish Medical Society met in Hammond on January 13, 1938. The following members were present: Drs. V. J. Gautreaux, Glenn Smith, C. D. Overton, R. F. Gates, A. L. Lewis, W. T. Newman, John Corso, L. L. Ricks, W. H. McClendon, M. C. Wiginton, J. DeLoach Thames.

A representative of the Child Welfare Department addressed the society in regard to the establishment of a Parish Health Unit. The society voted to endorse this movement and appointed two members to appear before the Parish Police Jury and Parish School Board to discuss the need of such a unit.

A representative of the Group Hospitalization Insurance Company of New Orleans outlined the policy of the company and the society voted favorably on any corporation in the parish desiring to obtain such a policy.

Dr. Maurice Campagna of New Orleans gave a very instructive talk on the treatment of heart disease.

J. DeLoach Thames, M. D., Sec.

NEW ORLEANS

GRADUATE MEDICAL ASSEMBLY

At a meeting of the general membership on Friday, April 22, the following officers were elected for the year 1938-39:

President: Dr. John H. Musser.

First Vice-President: Dr. Hilliard E. Miller.

Second Vice-President: Dr. H. W. E. Walther.

Third Vice-President: Dr. Maurice Lescale.

Secretary: Dr. Max M. Hattaway.

Treasurer: Dr. Francis E. LeJeune.

Director of Clinics: Dr. Emmett Irwin.

NEW YORK ACADEMY OF MEDICINE

The Eleventh Annual Graduate Fortnight will be held from October 24-November 4, 1938. This year there will be presented a program on diseases of the blood-forming organs. The complete program may be secured from Dr. Mahlon Ashford, 2 East 103rd Street, New York City.

AMERICAN PUBLIC HEALTH ASSOCIATION

The annual meeting of the American Public Health Association will be held in Kansas City, Missouri, October 25-28, 1938.

The Chicago Medical Society will run a special train to the meeting of the American Medical Association, leaving Chicago at 9:00 p. m. on June 9 and arriving in San Francisco June 12. Members of the State Medical Society are cordially invited to travel to San Francisco on this train.

AMERICAN HEART ASSOCIATION

The annual meeting of this organization will be held June 10-11, 1938, in the Sir Francis Drake Hotel, San Francisco. The first day's program will be devoted to disease of the heart; the second day's program to the peripheral circulation. On the program are Doctors Sodeman and Burch from New Orleans.

Dr. Isidore Cohn, Professor of Surgery and Associate Director of the Department in the Graduate School of Medicine of the Louisiana State University Medical Center, addressed a meeting of the Mississippi State Medical Society in Jackson, Mississippi. Dr. Cohn spoke on "The Making of a Surgeon" and "The Vascular Clinic."

BEAUREGARD PARISH MEDICAL SOCIETY
OFFICERS—1938

President: Dr. Thomas R. Startor, DeRidder.

Vice-President: Dr. J. D. Frazar, DeRidder.

Secretary-Treasurer: Dr. R. L. Love, DeRidder.

Delegate: Dr. R. L. Love, DeRidder.

Alternate: Dr. J. D. Frazar, DeRidder.

IBERVILLE PARISH MEDICAL SOCIETY
OFFICERS—1938

President: Dr. R. J. Spedale, Plaquemine.

Vice-President: Dr. W. E. Barker, Jr., Plaquemine.

Secretary-Treasurer: Dr. Frank O. Tomeny, White Castle.

Delegate: Dr. Eugene Holloway, Plaquemine.

Alternate: Dr. J. Cyril Eby, Plaquemine.

ST. MARY PARISH MEDICAL SOCIETY
OFFICERS—1938

President: Dr. J. T. Prosser, Morgan City.

Vice-President: Dr. F. H. Metz, Morgan City.

Secretary-Treasurer: Dr. P. S. Parrino, Franklin.

Delegate: Dr. T. H. Gueymard, Morgan City.

Alternate: Dr. G. G. Aycock, Patterson.

BOSSIER PARISH MEDICAL SOCIETY
OFFICERS—1938

President: Dr. Elda S. Coyle, Plain Dealing.

Vice-President: Dr. R. O. Carter, Bossier City.

Secretary-Treasurer: Dr. John B. Hall, Benton.

Delegate: Dr. John B. Hall, Benton.

Alternate: Dr. Elda S. Coyle, Plain Dealing.

VERMILION PARISH MEDICAL SOCIETY
OFFICERS—1938

President: Dr. J. T. Abshire, Kaplan.

Vice-President: Dr. A. Landry, Delcambre.

Secretary-Treasurer: Dr. M. A. Young, Abbeville.

Delegate: Dr. J. T. Abshire, Kaplan.

Alternate: Dr. Leo Saporito, Kaplan.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the eleventh week of the year, ending March 19, syphilis, as per usual, led all reported diseases to such an extent that it represented over 50 per cent of the reports in this month. There were 290 cases listed. Other diseases occurring in frequency greater than 10 were: forty-five cases of pneumonia, 36 of gonorrhea, 32 of typhoid fever, 26 of chickenpox, 24 of pulmonary tuberculosis, 20 of whooping cough, 18 of cancer, 12 of diphtheria and 11 scarlet fever. Of the rare diseases, there were reported three cases of smallpox, one of typhus fever, three of undulant fever and one of tularemia. The typhoid fever cases came largely from Jefferson Parish, where there is a mild epidemic of this disease. For the next week, ending March 26, there were 205 cases of syphilis, 31 of pulmonary tuberculosis, 23 each of pneumonia and cancer and typhoid fever, 22 of whooping cough, 20 of influenza, 15 of hookworm, 14 of chickenpox, 13 of scarlet fever and 12 of gonorrhea. There were only two cases of typhoid fever reported in Jefferson, but, of the nine listed as coming from New Orleans, most of them were imported from Jefferson. There were four cases of tularemia from Red River Parish, and a case of lethargica encephalitis from Orleans. For the week ending April 2, syphilis was so far ahead of the reportable diseases that it is astounding. There were 669 cases reported from throughout the state. The next most frequent were 33 cases each of gonorrhea and chickenpox, followed by 30 of pulmonary tuberculosis, 27 of pneumonia, 25 of measles, 23 of whooping cough, 16 of cancer, 13 of typhoid fever, and 12 each of diphtheria and influenza. Four cases of cerebrospinal meningitis were reported this week; two cases of smallpox were reported from Washington Parish and one case of poliomyelitis from Winn Parish. Of the typhoid fever cases reported only one came from Jefferson. For the fourth week for which reports are available, that of April 9, syphilis was way in the forefront with 578 cases, followed by 30 of pulmonary tuberculosis, 29 of pneumonia, 23 of cancer, 19 of whooping cough and 10 of chickenpox. The typhoid fever cases were only nine in number this week, of which two were reported from Jefferson and four from Orleans; two of the latter were im-

ported. Four cases of tularemia were reported and two of undulant fever.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reports that for the week ending March 19, 1938, there were 164 deaths in New Orleans as contrasted with 134 the previous week. Of these deaths, 91 were in the white and 73 in the negro race. Twenty-two of the deaths were in children under one year of age, mostly negro children. For the next week, ending March 26, 154 deaths were recorded, of which 91 were in the white section of the population and the remainder in the negro. Infant deaths were only nine in number, divided four white and five negro. For the week ending April 2, there was a reduction of 20 in the number of deaths as compared with the previous week. Of these deaths 77 were in the white and 57 in the negro race. There were 15 infant deaths, two-thirds of which were in the white race. For the last week for which reports are available, that of April 9, there were 179 deaths in the city, divided 104 in the white and 75 in the negro population; twenty-two of these deaths were in infants under one year of age.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Herbert, New Orleans.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

Press and Publicity—Mrs. Lucian W. Alexander, New Orleans.

Dear Auxiliary Members:

This is my farewell message to you as your President, and I extend to each of you my profound thanks and appreciation for the cooperation and sympathetic understanding you have so generously given me this past year. The keen inter-

est and splendid cooperation of the membership has proved itself by the many and varied achievements of the parish auxiliaries during this regime. Further proof of this interest is the fact that eight new auxiliaries have been organized during 1937-38, fortifying the ideals upon which we are founded.

I am deeply grateful to you for the honor of serving you as your President, an honor which has afforded me the opportunity to know and become better acquainted with my fellow-workers and whose contacts and friendships always will be a cherished possession to me. I urge your continued interest in the auxiliary.

Sincerely,
Alma W. Feldner, President
(Mrs. George D. Feldner)

IBERVILLE PARISH

A meeting was held at the home of Mrs. R. J. Spedale with Mrs. George D. Feldner, President of the Woman's Auxiliary to the Louisiana State Medical Society, Mrs. C. Grenes Cole, Organization Chairman, and Mrs. Roy Carl Young, Councilor for the Sixth District, who aided the wives of the Iberville physicians in organizing the Woman's Auxiliary to the Iberville Parish Medical Society.

The following officers were elected:

President: Mrs. R. J. Spedale, Plaquemine.
Vice-President: Mrs. Boote LeBlanc, St. Gabriel.
Secretary: Mrs. E. C. Melton, Plaquemine.
Treasurer: Mrs. F. O. Tomney, White Castle.
Publicity: Mrs. R. D. Martinez, Plaquemine.

Mrs. E. L. Major, Rosedale, was Chairman of the Constitutional Committee. Mrs. Paul Young and Mrs. Jones of Covington, guests of Mrs. Roy Carl Young, also attended this meeting, since they were instrumental in the organization of this auxiliary with Mrs. R. C. Young.

Mrs. R. D. Martinez,
Publicity Chairman.

ATTENTION!

Following is the outline of the A. M. A. Convention to be held in San Francisco June 13-17, 1938, with headquarters at the Fairmont Hotel.

This is going to be a most interesting meeting, so make your plans now if you expect to attend this national meeting.

Mrs. Augustus S. Kech, President,
Altoona, Pa.

Committee on Arrangements: Mrs. J. C. Geiger, Chairman; Mrs. William H. Sargent, Vice-Chairman.

PROGRAM

Sunday, June 12: Arrival of delegates, mem-

bers and guests. To be met by local hostesses.

Monday, June 13:

9:00 a.m. Registration, followed by Board meeting.

12:15 p. m. Informal Luncheon.

2:00 p. m. Sight seeing trips:

(1) (a) Over the San Francisco-Oakland Bay Bridge to the University of California. After a drive through these beautiful grounds, we will stop for tea at the International House. (b) Across the scenic Golden Gate Bridge into "Marvelous Marin," up Mt. Tamalpais to Muir Woods, containing some of California's famous "Redwoods."

(2) (a) Golf (Medal Round). (b) Tennis, horseback-riding and swimming. (Make inquiries at Information Desk). Trip through Chinatown. This will include a visit to the Theatre and to the Joss House.

8:00 p. m.

Tuesday, June 14:

7:30 a. m. Southern Delegation breakfast.

9:00 a. m. General Session: Gold Ballroom.

12:15 p. m. An excursion on the San Francisco Bay. From the decks of the steamer you will obtain a never-to-be-forgotten view of the world's famous bridges. You will see also Yacht Harbor, colorful Fisherman's Wharf and Alcatraz Island, on which is situated the Federal penitentiary. Luncheon will be served on board.

Free Evening.

Wednesday, June 15:

9:00 a. m. General Session: Gold Ballroom.

12:30 p. m. Luncheon, honoring the National Board.

8:00 p. m. California evening (Surprise).

Thursday, June 16:

9:00 a. m. Post-convention Board Meeting: Gold Ballroom.

10:00 a. m. (1) Golf (Medal Round). (2) Sight-seeing trips: (a) Over the Skyline Boulevard to Stanford University, visit-

ing the chapel with its beautiful mosaics. The home of former President Herbert Hoover is situated on the campus. Luncheon will be served at the Allied Arts. The return trip will be made over the Bay Shore Highway; (b) A tour of the City of San Francisco: through Golden Gate Park, visiting the Japanese Tea Garden while there, thence to Fleishhacker Pool and the Zoo, along the shores of the Pacific Ocean, past the Cliff House to the Presidio, along the Marina to Fisherman's Wharf and then through Chinatown.

4:5:00 p. m. Musical, Exhibit Room (Tapestry Room).

7:00 p. m. Bring your husband. Dinner, music and entertainment.

9:00 p. m. President's Reception and Ball.

ORLEANS PARISH

The Woman's Auxiliary to the Orleans Parish Medical Society held their regular monthly meet-

ing and tea on Wednesday, April 13, at the Orleans Club.

Plans for the coming State Convention were discussed. Mr. S. Chaille Jamison, General Chairman, assisted by Mrs. Shirley C. Lyons, Vice-Chairman, and a large committee have arranged a number of entertainments in addition to the business sessions, the high lights of which will be a style-show sponsored by Gus Mayer Co., Ltd., one of our leading women's shops, and a tea on the last day of the Convention, May 4, at the New Orleans Country Club, in honor of the incoming State President, Mrs. Frederick G. Ellis of Shreveport. We are hoping for a big registration for the Convention.

The Honorable Hugh M. Wilkinson, well known New Orleans lawyer, spoke on "The Human Interest Side of the Constitution," and Dr. Walter Levy gave a short talk on "Periodic Health Examinations," in the interest of which the auxiliary is now making their annual appeal.

Mrs. S. M. Blackshear,
Publicity Chairman.

I want to take this opportunity to thank the Publicity Chairmen, through whose efforts this column was made possible, for the cooperation they have given me this past year. I hope everyone has enjoyed reading it.

Mrs. Lucian W. Alexander,
Chairman Press and Publicity.

BOOK REVIEWS

The Endocrines in Theory and Practice: Articles republished from the British Medical Journal. Philadelphia, P. Blakiston's Son and Company, 1937. Pp. 278. Price \$3.50.

Altogether twenty-eight writers, some of whom are very well known, have contributed to this little work, or rather their articles which have appeared in the British Medical Journal between the issues of October 17, 1936, and May 15, 1937, have been incorporated into book form.

For the most part experimental data obtained on animals have been avoided and the confusing results of clinical observations critically examined and evaluated. Even so, the element of doubt is by no means infrequent in the authors' statements, as is evident from the many qualifying expressions.

A number of contributions are outstanding and deserve more than casual reading; for example, Harrington's "Physiology of the Thyroid Gland," McCarrison's "The Problem of Endemic Goiter" and two articles on the chemistry of estrogenic compounds, and male hormones, respectively by E. C. Dodds and R. K. Callow. The chemistry of thy-

roxin by Harrington is also very instructive and helpful in obtaining an insight into this most complicated and important substance. Nevertheless, both chemistry and physiology leave deficiencies enough in our understanding of the complex action of glandular activity, and it is clearly evident that we may ask much and get little in reply at this stage of endocrinology.

Sir Humphrey Rolleston contributes a final chapter on "History" which, to say the least, possesses the merit of brevity, without particular enlightenment. That is probably to be expected in a book of this sort since what the practical man wants to know is what it is possible to do now, and what we have to do it with, rather than bother about the fumbings of antiquity, however interesting and necessary they may be.

In general the information contained between the covers of this book is clear, or at least as clear as it can be made at the moment. It represents a landable attempt to place before the practitioner the meat of clinical experience without the gar-

nishings and as such is a worthwhile contribution to a difficult and intricate subject.

L. C. SCOTT, M. D.

A Method of Anatomy: Descriptive and Deductive:

By J. C. Boileau Grant, M. C., M. B., Ch. B.
Baltimore, William Wood & Company, 1937.
Pp. xx + 650, figs. 564. Price \$6.00.

This volume, by the Professor of Anatomy at the University of Toronto, is an innovation in the field of anatomical textbooks. Less than a third of the bulk of the familiar texts of gross anatomy, with original, simplified illustrations and above all differing in the method of presenting subject matter, "A Method of Anatomy" challenges the traditionally plethoric teaching of anatomical rote. Doctor Grant writes: "The study of human anatomy may be attempted in either of two ways. One consists in collecting facts and memorizing them . . . The other way consists in correlating facts, that is, studying them in their mutual relationships . . . The book is meant to be a working instrument designed to make anatomy rational, interesting and of direct application to the problems of medicine and surgery. The bare, dry and unrelated facts of anatomy tend rapidly to disappear into forgetfulness. That is largely because its guiding principles are not grasped so as to capture the imagination. Once they are grasped it will be found that details and relationships will remain within certain and easy recall."

The treatment is by regions rather than by systems as in standard texts; the central nervous system is omitted in recognition of the common assignment of this system to a separate course with a special text. Emphasis is given to developmental, physiological and practical considerations, and the reader is constantly reminded of significant deductions to be drawn from observed structure. The subject of anatomy is brought before the medical student shorn of much detail, in accord with the author's commendable aim as above quoted, but supplying adequate working knowledge of facts and at the same time stimulating a thoughtful analysis of structure.

HAROLD CUMMINS, PH. D.

The Story of Motherhood: By Roy P. Finney, M. D.
New York, Liveright Pub. Co., 1937. Pp. 359. Price \$3.00.

This work should be a "best seller", not only among those interested in obstetrics, but for anyone interested in the history of one of our most vital and fascinating subjects.

Dr. Finney has presented us with a masterpiece. His story begins with the earliest known facts concerning motherhood and continues with the history of each important step forward in the practice of obstetrics. Each chapter is a separate story that

is full of romance. His remarks and advice given in his closing chapters on voluntary motherhood, illegal abortion, and sterility are well founded, and reveal sound basic thought.

The true value of the book is best described by stating that once reading has begun, great hesitancy occurs before the book is put down. I can heartily recommend this fascinating work to the profession and laity alike, and believe it should adorn the bookshelf of every obstetrician.

HARRY MEYER, M. D.

Artificial Fever Produced by Physical Means: Its Development and Application: By Clarence A. Neymann, A. B., M. B., F. R. S. M. Springfield, Illinois, Charles C. Thomas, 1937. Pp. 285, with 68 illus. Price \$6.00.

It is characteristic of the present time that man is prone to accept without reservation the vogue of the day. Hyperpyrexia as a therapeutic agent is certainly the vogue of the day. Though it has proven value in the treatment and cure of many disorders, it must not be considered a cure-all, for there are many diseases whose very nature exclude the employment of fever therapy as a palliative or restorative remedy. It is therefore refreshing as well as enlightening to read Dr. Neymann's new book, "Artificial Fever." It is an unbiased, comprehensive treatise on this subject, and it considers the development of hyperpyrexia by physical means and its application to various conditions amenable to this form of therapy.

Scientific experimentation is always laudable and investigators should not be discouraged by apparent failure or small response to the modus operandi employed. However, since hundreds of investigators clutter the literature with painfully acquired material which has passed the realms of probability, it is of great value to the physician to know the limitations of hyperpyrexia as well as its expectancies. The author's first hand knowledge of the subject as well as his careful gleanings from five hundred and fifty reports and articles make this book of inestimable worth to students, technicians and physicians.

Dr. Neymann recognizes the fact that we who are exponents of physiotherapy are able to progress in this field only because of our conscious and unconscious heritage from the past. It is only fair, he says, that the contributions of our progenitors and contemporaries be accorded the place they deserve in the archives of medical history. The compiling of these is, in itself, a tremendous task, and we are exceedingly grateful to him for its completion.

The history of hyperpyrexia is an interesting one, but as the chief concern of the physician is "the physiological observations made on patients treated with therapeutic bouts of fever," we will endeavor

to outline briefly the physiological aspects of fever therapy and the technic of its administration.

The principles involved, and the physical factors determined through a thorough examination of the patient will determine the physician's procedure in each individual case.

The two types of treatment are external or conductive type of heat and internal or penetrative heat.

While having no desire to promote or underestimate either method used in fever therapy or any machine or devices, the author evaluates from his own experience and that of others those which he deems best for the patient. The skilled physician or technician may be equipped to administer the required fever bout regardless of the equipment or the modality employed. His skill transcends every other factor. Yet, when adverse situations are likely to arise under certain physical conditions, it is wisest to use the best possible equipment for the best possible results.

External heat methods in common use are hot baths, atomized hot water, heated air, radiant energy cabinets, electrically heated humidified hot air cabinets and electric blankets. In many of these, unfavorable physical or psychic reactions may be present. Sometimes burns may result because of improper condensation of heat. Proper control and maintenance of heat may be difficult. Some may require too long a period for induction. Patients may become fatigued or exhausted. Delirium may result, or, as in the use of the infrared light cabinet, application of external heat to the surface of the body has a marked tendency to upset the heat regulating mechanism, thus causing heat stroke and possibly death. In the use of external heat for the production of artificial fever, regardless of the device or apparatus employed, there is a reversal of the normal physiologic heat gradient.

Of course, in most of these, there are desirable features or their use would have been discontinued. Balneotherapy has almost passed into disuse. All physical devices which employ external heat are necessarily of similar construction.

Internal or penetrative heat methods are diathermy, radiothermy and electromagnetic induction. Diathermy as merely an artificial fever agent may soon be discontinued, as it is being superseded by electromagnetic induction.

Since the radiotherm was first introduced on the market, many machines applying the principles of inductive heat have appeared. No perfect artificial fever cabinet has ever been devised, but many of the objectionable features of external heat have been eliminated through the employment of the electromagnetic field in combination with the humidified air cabinet. In these cabinets the patient is surrounded by an atmosphere of condi-

tioned air which is just comfortably warm and used for insulating purposes and not for production of artificial fever.

The author's experience—that there should be no heat strokes or delirium when penetrating heat is used—should be the experience of every physician or technician. Internal heat encounters no reversals in nature's physiologic laws. Its simplicity of principle, its ease and safety of operation, and the maximum degree of comfort which it affords the patient makes this method the most efficient and most desired one now in use for the production of artificial fever.

Most of the chemical changes in the human body are transitory, but the physician must know how to combat each one and control seemingly unfavorable situations. The technic requires a skilled administrator, the primary essential to the safety of the patient.

The evolution of hyperpyrexia was the development of a well thought out plan in which the author played no small part. He reasoned that, if such agencies as vaccines and malarial injections could produce fever with favorable results, then fever was the beneficent explanation for their success in the treatment of general paresis. Nine of the fifteen chapters in the book are required to enumerate and describe the many diseases that are amenable to treatment by hyperpyrexia. The treatment of general paresis, syphilis of the central nervous system, and chorea minor is phenomenal. Hyperpyrexia is the treatment of choice for gonorrheal arthritis. It is also a specific for all forms of gonorrhea. This is because the lethal rate of the causative organism is known and the human body is able to endure the induction of heat sufficient for its destruction. While Dr. Neymann's treatise is concerned with the treatment of disease by hyperpyrexia, he also advocates the use of chemotherapy when medical treatment must necessarily accompany pyretotherapy. This, however, is only an experimental procedure at present.

It is impossible in this book review to describe treatment for the diseases which yield, in greater or less degree to pyretotherapy. The author devotes a portion of a chapter to forty-seven diseases which contraindicate its use. These include bronchial conditions, tuberculosis, poliomyelitis, schizophrenia, and bacterial endocarditis, which illustrate the limitations of the field.

Dr. Neymann concludes his book with a warning to evaluate all reports with the proper amount of critical judgment and reserve. While he foresees a great future for hyperpyrexia in the therapeutic field, he prefers that its possibilities be underestimated rather than overestimated. Pyretotherapy is a legitimate modality in some diseases, but its reputation must be honestly earned and not smack of quackery.

The book is well written. It summarizes the present literature on this subject. The outline method followed in many of the chapters, as well as illustrative charts, graphs, and photographs make the work valuable not only at the present time but for generations to come.

UPTON GILES, M. D.

An Introduction to Dermatology: By Richard L. Sutton, M. D., Sc. D., LL. D., F. R. S., and Richard L. Sutton, Jr., A. M., M. D., L. R. C. P. St. Louis, C. V. Mosby Co., 1937. Pp. 666. Price \$5.00.

The writing team of Sutton and Sutton has produced another excellent volume in their "Introduction to Dermatology." The book is in reality an abridgement of their more comprehensive text on the same subject, "Diseases of the Skin," which has already gone through nine editions.

The "Introduction to Dermatology" represents much more of dermatology than its title implies. Many of the rarer dermatoses are briefly, but adequately, described, and recent advances in dermatology are well covered.

The Suttons' book can well be utilized by every general practitioner and dermatologist.

M. MALLOWITZ, M. D.

Methods of Treatment: By Logan Clendening, M. D. St. Louis, C. V. Mosby Co., 1937. Pp. 879. Price \$10.00.

The original design and aim of the book have been maintained. Revision has consisted in the main in the amplification of methods that are proving more valuable and of the admission of new treatments, like protamine zinc insulin that has become an invaluable aid in the therapy of disease.

To those not familiar with the book it may be briefly described as follows. It consists of two major portions: Part I deals with the methods of treatment employed in medicine and quite thoroughly runs the gamut of all types of therapy as exercise, dietetics, drugs and endocrines. Part II concerns itself with the therapeutic procedures employed in the various diseases with the advantages, disadvantages and shortcomings of each procedure listed. There are many illustrations which are satisfactory. The fact that a sixth edition has been brought out is sufficient proof that it is well thought of and fills a distinct need.

I. L. ROBBINS, M. D.

Practical Methods in Biochemistry: By Frederick C. Koch. Baltimore, William Wood & Co., 1937. Pp. 302. Price \$2.25.

This splendid laboratory manual for physiological chemistry is welcome in its second edition. Excellent in the first edition, this manual now in-

cludes more detailed instructions on the determination of the urea clearance as a measure of renal function.

There are some omissions of classical methods; and this is done in the interest of the inexperienced student to avoid a bewildering choice of methods. Additional emphasis on the author's modifications of standard methods is understandable, but must limit the usefulness of the book for more mature workers.

It is a very good laboratory manual.

SIDNEY BLISS, Ph. D.

Synopsis of Genitourinary Diseases: By Austin I. Dodson, M. D., F. A. C. S. 2nd ed. St. Louis, C. V. Mosby Co., 1937. Pp. 294. Price \$3.00.

"Synopsis of Genitourinary Diseases" is an excellent compend of genitourinary diseases and a handy reference to the physician in practice. In addition, it serves as a background for anyone interested in urology. The style and arrangement are easy to comprehend.

The second edition contains some changes and additions in the discussion and treatment of genitourinary diseases, e.g. diets in the treatment of urinary infections and the control of calculus formation, discussion of neurogenic and functional disturbances of the bladder and functional disturbances of the male sexual system.

JOHN G. MENVILLE, M. D.

The Treatment of Some Chronic and Incurable Diseases: By A. T. Todd. Baltimore, William Wood, 1937. Pp. 203. Price \$3.00.

The author's professed purpose is to show the causative role played by "chronic nasal sepsis" in the production of asthma, bronchitis, "false phthisis," emphysema, acute and chronic rheumatism, chorea, epilepsy, nephritis and duodenitis, and in turn, the etiologic significance of duodenitis in hepatic disease, cholecystitis and visceroptosis. The first chapter, on diabetes mellitus, dismisses as fallacious the currently accepted views of carbohydrate metabolism, maintains the likelihood that insulin perpetuates the diabetic state, and by specious logic supports the management of diabetes with synthalin, even when coma is imminent. The following chapters are equally unacceptable, for example, that on false heart disease discusses myocardial degeneration, angina pectoris, and coronary thrombosis! The appendix describes some favorite laboratory procedures, a few rather complicated prescriptions, a weight, height and basal metabolism table, and, for some reason, a collection of dessert recipes. The last of the recipes entitled "to make a cake without fresh milk or eggs," might have been most useful to patients

far removed from these commodities, were it not for the fact that fresh butter is required.

GEORGE M. DECHERD, JR., M. D.

The Pneumonokonioses (Silicosis). Book III: International Abstracts, Extracts and Reviews of the Pneumonokonioses and their Associated Diseases and Subjects: By George G. Davis, M. D., Ella M. Salmonsens and Joseph L. Earlywine. Chicago, Chicago Medical Press, 1937. Pp. 1033.

This book is in fact Vol. III of a series of publications concerning the pneumonokonioses, compiled by the same authors. The purpose of these works is expressed in the preface of Book I, i.e., "a reference book, designed for the permanent convenience of physicians, surgeons, lawyers, industrial executives, librarians, journalists, engineers, trade-association officials, students, and research workers." The references in Book I begin with Agricola's "De re metallica" in 1556, and Book III includes abstracts of articles published during 1936. Book III consists of Part I which includes abstracts of articles published during 1935-1936, and Part II which presents the occupational disease laws pertaining to the pneumonokonioses now in force in the United States and in several foreign countries. The abstracts of articles in foreign languages have been translated and are printed in English.

AMBROSE H. STORCK, M. D.

The Management of the Pneumonias: By Jesse G. M. Bullowa, B. A., M. D. New York, Oxford University Press, 1937. Pp. 508. Price \$8.50.

This book contains much valuable information on the pneumonias, found particularly in the presentation and correlation of procedures based upon the author's actual experience in the treatment of large numbers of patients with pneumonia. The author's own statistics clearly outline the value of many procedures, such as the administration of serum, and give the reader not merely a general statement of what is best and what is not best to do, but develop for him a background of experience, which acts better to orient him in his own work. In this manner, the author is able to present to the reader not merely the time honored therapeutic procedures compiled from many sources but an evaluation of measures he has found in actual experience to be valuable and necessary.

The pneumonias are considered systematically, first as to classification and course, and then as to clinical and laboratory diagnostic measures. Treatment is divided into a discussion of general measures, oxygen therapy and serum administration. One finds here much detail, particularly in the use of oxygen and serum. No fact is too small to escape a clear elucidation of its proper adminis-

tration. Herein lies another important aspect of the book. Bullowa could easily state the indications, for example, for oxygen therapy, and assume that the reader understands the mechanics of its administration. Instead, evaluation of catheters, masks, and tents is given; details of the manipulation of the gauges, effects of environmental temperature, rate of air movement, estimation of oxygen percentage in the inspired mixture, specifications for tents, and other similar important details, too often neglected by the physician and left to inadequately trained nurses, are brought out. Similarly, under serum therapy, definite and specific directions and data are given. After perusing Bullowa's book, the reader should know when to start and when to stop serum therapy, how and why.

To be sure, one can find statements which are erroneous, such as the remarks on sweating on page 54, but this reviewer sees no reason to magnify such relatively unimportant aspects of the book.

The book is an important source of information on the pneumonias for the internist as well as the general practitioner and student.

W. A. SODEMAN, M. D.

Demonstrations of Physical Signs in Clinical Surgery: By Hamilton Bailey, F. R. C. S. (Eng.). Baltimore, William Wood and Company, 1937. Pp. 284. Price \$6.50.

This book is the latest revised edition of the author's previous texts bearing the same title. After the fashion of some of the other better English medical writers, Bailey presents a limited theme succinctly yet with sufficient completeness and with enough infusion of his personal observations to make the book both valuable and readable.

The text is well correlated with appropriate pictures which demonstrate the methods of eliciting the important physical signs associated with surgical lesions involving the various parts of the body.

The many editions of this work attest its merit both as a guide for students and as a useful compendium for practitioners.

AMBROSE H. STORCK, M. D.

Medicine for Nurses: By W. Gordon Sears, M. D. (Lond.), M. R. C. P. (Lond.), 2nd. ed. Baltimore, William Wood & Co., 1937. Pp. 435. Price \$3.25.

The second edition of this medical text for nurses is compact, clearly written in an interesting style, and contains information which is more than adequate for the nurse's needs. It is modern in every respect, describing the newest in medical equipment and therapeutic procedures. Excellent chap-

ters on poisoning, materia medica, and the causes of sudden death have been added to the second edition. Throughout the book special emphasis is placed upon those medical conditions for which good nursing care is most valuable. One of the highlights of the book is the passage devoted to examination of the pulse. The physiologic explanation for many of the conditions described makes the volume most acceptable for teaching purposes. Despite the scanty presentation of venereal diseases and the deficiency diseases, we consider this book a suitable medical text for nurses.

MORRIS SHUSHAN, M. D.,
AND RUTH M. SHUSHAN, M. D.

Milestones in Medicine: By James Alexander Miller, M. D. New York, Appleton-Century, 1938. Pp. 276. Price \$2.00.

"Milestones in Medicine" is a very interesting volume, perhaps a little detailed in parts, but giving sketches in the history of psychiatry, endocrinology, leprosy and general medicine. To the reviewer, Dr. Vogel's chapter, "Medicine at Sea in the Days of Sail" and Dr. Wayson's chapter on the "History of Leprosy" are the most fascinating. When one reads of the type of medicine practiced and the hardships our forefathers in medicine encountered, we realize how smooth our medical lives are.

SUZANNE SCHAEFER, M. D.

Obstetrics for Nurses: By Joseph B. DeLee, A. M., M. D., and Mable C. Carmon, R. N. 11th ed. Philadelphia, W. B. Saunders, 1937. Pp. 659. Price \$3.00.

The fact that the present edition of this work is the eleventh is the best testimony as to its popularity in its special field.

The senior author is of course known throughout the world, and he has brought this work thoroughly up to date from the point of view of scientific obstetrics. The junior author is the chief supervisor of the birth rooms of the Chicago Lying-In Hospital, and contributes a great deal in the way of details of technic. The needs of the nurse are always considered, so that the book is not too elaborate or too technical; at the same time, nothing that she should know is omitted. At all times, emphasis is laid on the great benefits occurring from good obstetrical practice, such as the reduction of mortality and morbidity, and the important role played by the nurse is stressed. The dignity and importance of the practice of obstetrics is emphasized throughout.

This book can be unqualifiedly recommended as a text book for nurses' training schools, as well as one well worth including in every nurse's library.

E. L. KING, M. D.

Theoretical Principles of Roentgen Therapy:

Edited by Ernest A. Pohle, M. D., Ph. D., F. A. C. R., with a Foreword by W. Edward Chamberlain, B. S., M. D., F. A. C. R. Philadelphia, Lea & Febiger, 1938. Pp. 271. Price \$4.50.

This volume by three radiologists and two physicists deals exclusively with the theoretical principles of roentgen therapy. It has been written for the radiologist, who must understand the theoretical principles underlying roentgen therapy and the research worker, who is not interested in the clinical application of the roentgen rays.

The first chapter is devoted to the physics of the roentgen rays and includes a discussion of those fundamental facts of physics so necessary to workers with roentgen rays. Roentgen therapy apparatus of various types is considered in Chapter II. Some space is devoted to a discussion of apparatus employed for supervoltage roentgen therapy.

The discussions of dosimetry, radiobiology and radiopathology are thorough, practical and complete and should be studied carefully by every roentgen therapist. Many excellent reproductions of photomicrographs showing the reactions of normal and diseased tissues to the roentgen rays are included. The "Safety Rules" adopted by the International Committee are incorporated in the last chapter.

This work very well serves the purposes for which it was prepared. The bibliography is fairly complete and the illustrations are excellent.

J. N. ANÉ, M. D.

PUBLICATIONS RECEIVED

Lea & Febiger, Philadelphia: A Textbook of Pathology, edited by E. T. Bell, M. D.

J. B. Lippincott Company, Philadelphia: The New International Clinics, Vol. I, New Series One, edited by George Morris Piersol, M. D.

C. V. Mosby Company, St. Louis: Hemorrhoids by Marion C. Pruitt, M. D., L. R. C. P., S. (Ed.), F. R. C. S. (Ed.), F. A. C. S. The Heart in Pregnancy by Julius Jensen, Ph.D. (In Medicine) University of Minnesota, M. R. C. S. (England), L. R. C. P. (London). Symptoms of Visceral Disease by Francis Marion Pottenger, A. M., M. D., LL.D., F. A. C. P.

W. B. Saunders Company, Philadelphia: The Practice of Urology by Leon Herman, B. S., M. D.

The Williams & Wilkins Company, Baltimore: Textbook of Clinical Pathology edited by Roy R. Kracke, B. S., M. D. Essentials of Psychiatry by George W. Henry, M. D. Civilization and Disease by C. P. Donnison, M. D. (Lond.), M. R. C. P. (Lond.).

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STATE MEDICINE*

THE PRESIDENTIAL ADDRESS

CHARLES M. HORTON, M. D.
FRANKLIN, LA.

So much has been said and so much has been written about State Medicine that it is with some hesitancy that I speak to you, at this time, on the subject. However, because of its paramount importance, both to the public and to the profession, I believe it is worth while to give expression to the views of the medical profession, as I understand them.

Two widely antagonistic forces are striving for dominance in America. On one side, is the desire and ambition of the individual to live his own life and carry his own responsibilities and secure the utmost mental and material development, while on the other is the ambition to have the people subjected wholly to herd ideas, whether advantageous or otherwise—with only an inner certitude, a personal sense, necessarily imperfect, that the way the herd is directed is also the best way. The contest is between individuality and regimentation—and while regimentation with its attendant oppression has secured high place among decadent nations of Europe it will be bitterly fought in an America which has grown great through private initiative.

The doctor is by instinct and training an individualist and sometimes so zealous that he is reluctant even to join his fellows in a common aim but there is no field where such an attribute is more essential than in medicine. With proper professional equipment and wisdom the doctor should be free to exercise his best judgment in his gallant struggle against

disease and death and to bring unhampered all his skill and experience to succeed in his daily combats with life's enemies.

Regimentation, on the other hand, deprives the average mind of all chance of growth and the ambitious mentality of all hopes of fruition. Simultaneously, it diminishes that superb efficiency which appears when a person responds to the normal incentives to happiness and success; incentives that arise from an inherent consciousness of a personal importance in the world of affairs.

Such individualism, undoubtedly, has often been carried to an extreme by zealous medical men. In their desire to conquer disease and help humanity they have become the slaves of charity. They give, as always, of their services gladly to the poor. Even before the war, doctors gave gratuitous medical and surgical treatments to the value of many thousands of dollars a year and since that catastrophe, the profession has been strained to the utmost in time, service and money. Yet the salaried altruists prate to the doctors about philanthropy—to the doctors, mind you, who almost invented this ministry.

The time honored attitude of the profession toward the indigent sick is well known, too well perhaps, and often imposed upon by such apostles of regimentation as the salaried altruists, the social theorists and "charity brokers" who are anxious to enlarge their personal prestige. Many institutions vie with one another to secure a numerical increase in their dependents for the enlargement of their personal perquisites and importance.

The principle is fallacious and unworthy. We should, as reasonably, expect the prisons and asylums of the state to compete for inmates. Such ambitions can only result in

*Presidential address read before the fifty-ninth annual meeting of the Louisiana State Medical Society, May 3, 1938, at New Orleans.

injury to the personal pride and self-esteem, and moral deterioration of the victim. A worthy citizen is entitled to adequate aid until he is competent to carry on but as soon as possible the support should be withdrawn lest the morale be broken and a chronic dependency established.

The practice of charity is one of the most ancient and glorious traditions of medicine but the profession is aware that this phase of their calling is not infrequently misunderstood or abused by the undeserving, for that charity is pernicious which takes from independence its proper pride and from mendacity its proper shame. The abuse of charity leads for the physician to pauperization of the body and for the patient to the even more serious pauperization of the soul. The abuse of charity, moreover, arouses the indignation of the doctor since every such case of malingering prevents the extension of legitimate aid to a worthy object. Loss of morale is an invariable consequence where high ambitious qualities are regimented. The exercise of charity which has always been cherished as a laudable virtue has now become an organized and remunerative industry in the hands of social theorists, who under the mask of humanity hoodwink the government, prey upon the doctors, exploit the poor and weaken or destroy the virile American traits of self-respect, resourcefulness and resolution so that they themselves may tread the primrose path.

With a full knowledge of these conditions, the medical profession has been striving to correct social evils, accommodate its work to the changing face of society; and adapt its practice to the gradual mechanization and industrialization of American life. New forms of medical procedure are being tested in nearly all of the states and unusual plans for medical service are being introduced.

These experiments cover, in some degree, every aspect of medical work and while some are conducted honestly and ethically others are devised exclusively for a personal advantage. Schemes of medical and hospital insurance, free and pay clinics—medical care for a fixed yearly fee, contract practice and corporation practice are the most common examples.

Corporations, casualty companies and insur-

ance societies, are usually the outgrowth of lay efforts to exploit the medical man but in California and Washington, in Michigan, Massachusetts, Utah, Georgia, Virginia, Ohio and other states sincere efforts are being made to change the character of professional activity without a corresponding loss in that quality of competence and efficiency which stands highest in the world today. Some of these hundred or more projects under trial by county societies have been tentatively endorsed by medical authority and if allowed to develop will, in time, find a proper and satisfactory adjustment.

These methods of careful experimentation, however, are too slow for the social theorists and salaried altruists who want the world revamped according to their vaporous fancies while they are still able to enjoy the expected prestige and the financial compensation.

They are possibly aware that the earth is some fifty million years of age and alters slowly, but hope, nevertheless, to bring about a radical reversal of social conditions in a few intense, unnatural months. The social theorists have always existed but the salaried altruist and the "charity broker" are purely modern productions. They belong to that large company of adventurers who prefer to exploit the assured rather than to explore the unknown. Thus they strive for regimentation of workers and employers, of proletarians and scientists and of physicians, who are all four, by fiat. They visualize a large, clean, orderly house-keeping plant with themselves at the head and all personal ambition and means of development abolished, or subordinated to their personal theories regarding the method and direction which evolution should pursue and where remuneration could be most worthily and satisfactorily bestowed.

It is one of the strange freaks of human nature, and one of the tragedies of government that many men who through political accident secure office, immediately become obsessed with the idea that they are the sole custodians of American principles, the sole guardians of American institutions and the exclusive possessors of American ideals.

The immediate goal which the professional altruists hope to attain in medicine is socialization. This is a menace both to medicine and

to the public. It is a most important factor, however, in their plan for the only social advance that ever obtained recognition was won by way of medicine. Obviously the medical profession has a direct and immediate interest in any scheme which is intended to transfer the ultimate control of intrastate sanitary and medical activities from the proper authority in the commonwealth to a Washington Bureau and to a lay management.

Medicine, like individual liberty, is fundamentally an expression of the ethical life, and medicine suffers injury whenever and exactly to the degree in which its liberty is invaded. As the dissenting minority report on the Cost of Medical Care very properly declares: "There is nothing in experience to show that State Medicine is a workable scheme or that it would not contain evils of its own which would be worse than those it is supposed to alleviate. Above all, there is no evidence to prove that it would accomplish what ought to be the first object of this Committee, a lessening of the cost of medical care."

The attempt to centralize in Washington the management of affairs that of right belong to the respective states is to create a system which inevitably destroys our democracy and betrays the fundamental principles of our government. If one constitutional right is abrogated by purchase or political pressure the others are not safe. In health matters this is particularly dangerous for in a very short time politics would have its finger on the wheel and inherent in politics are graft, stupidity, incompetence, intimidation and everywhere the suppression of individual enterprise and medical responsibility associated with a rapidly increasing tax rate. The inevitable rise in taxation must be emphasized for those who resent the present imposts. It is an accepted fact that when the government goes into any particular kind of business that business is operated with less efficiency and less economy than if it is run by private enterprise. A recent editorial in *The Milwaukee Journal*, which was reprinted in the *New Orleans Item*, illustrates the point very nicely. Under the caption: *State Doctoring*—a medical man's objection, the editorial comments on the statement made by Dr. Dexter H. Witte, former president of the Mil-

waukee County Medical Society, that under the veterans administration at Washington it costs the government \$4004.00 for each patient admitted to a government hospital. Dr. Witte states that the American Medical Society, or the Milwaukee County Medical Society or he personally would undertake to care for these patients at one half the cost. I quote directly: "Dr. Witte is not alone in this. For years there has been talk among competent medical men that the cost of medical care for the veterans is astounding. It has been proposed before that private hospitals be given the job Dr. Witte speaks about. But try and make a dent with that proposal. When you once get a government bureau started, it lives—and spreads like dandelions."

Regimentation of medical men under state control means unmistakably that the science of medicine is to be dragged in the gutter of political robbery at the behest of social theorists and sentimental perverts. Sentimentality has never been successful in preventing politics from making a mess of public affairs. Is it probable that sentimentalists, social theorists or salaried altruists will in any way obstruct contamination of medicine by political grafters even if their attention is arrested by it? "It will be a sad day for society," said President Wilson, "when the sentimentalists are encouraged to suggest all the measures that shall be taken for the benefit of the human race."

Furthermore, when federal and state governments undertake concurrent jurisdiction, the commonwealth practically surrenders its prerogatives and lets government dominate and perform those functions that are inherent and statutory to the State. *Where the government has assisted, the government eventually controls.* Also, when once a bureau is established it grows and expands and demands more and more from taxation.

Bureaucracy through liberal federal grants even now is sapping the vitality of the states and breaking down their morale and political independence. Bureaucracy is the slave of politics and results in a chaos of inefficiency. Bureaucracy is always a curse, like a receivership in bankruptcy, and if once established in the practice of medicine it will emasculate efficiency and paralyze progress.

Senator Borah said: "The course we are now pursuing will prove in the long run more dangerous than a foreign foe. A proud nation may suffer a reverse in arms but time may still find it triumphant. An independent and self-reliant people may be overcome by fortunes of war but time fights on their side to a final victory. But a nation whose citizenship has been drugged and debauched by subsidies and gratuities and bonuses—a nation which has surrendered to the excesses of a treasury orgy, has taken the road over which no nation has yet been able to effect a successful retreat."

State Medicine cannot change human nature though it may alter relationships. Independence in medical practice is as essential to the happiness and prosperity of doctors and to the advance of scientific medicine as independence in citizenship is to the welfare of government, and this priceless independence gained by prodigious expenditure of blood and treasure should, under all circumstances, be sacredly preserved to the people of these United States.

Your attention is directed to the fact that already changes are taking place in medical practice and further changes are to be expected. Through the operation of the Maternal and Child Welfare sections of the Social Security Act, federal funds are being furnished through State Boards of Health for additional care for mothers and children. In Louisiana, new charity hospitals are being constructed and new charity beds are being subsidized in hospitals already existing. These activities and others of like character are being undertaken, ostensibly, for the indigent. But—who are the indigent? Some one has suggested that we should have a law defining indigency. With that I agree.

Finally, I admonish my professional brethren always to be ready, as I know they will be, to give aid and support to any movement for helping the indigent sick, but to resist, to the utmost, any effort to provide universal health insurance or further encroachment on private medical practice.

INAUGURAL ADDRESS*

JOSEPH A. O'HARA, M. D.

NEW ORLEANS

By tradition, down through the fifty-eight years existence of our State Medical Society, the incoming president is accorded the honor of delivering an inaugural address. In being inducted into the presidency, therefore, I recognize I become but a symbol and the consoling thought of being a symbol is that it is evident that you of yourself can do little, but what you symbolize brings strength and courage and the hope of wisdom—but of wisdom I shall not say too much.

My position, tonight, is that of the man, who upon being asked if he could play the violin replied that he presumed he could as he had seen it played many times, but so far he had never tried it. I have heard the president-elect address his colleagues year after year, but I lack the confidence of the would-be violinist.

You have had as presiding officers, men of national, even international fame, men who by their eloquence have held their listeners spellbound, or by their learned excursions into the science, history and economics of medicine, have caused wonder that one man could have such knowledge; leaders with the vision to build for the future.

Of their prominence, eloquence, knowledge and vision I fall far short, but I do have a great appreciation of the accomplishments which are part of our heritage. That I shall prove worthy of following in the footsteps of those splendid characters who breathed the breath of life into the nostrils of our organization is my aspiration. With this ideal, I shall seek so to guide the destinies of our Society that the next year, too, may record continued advancement. To be able to carry this responsibility, I can only hope that I may receive and merit the support and sympathy of my fellow members.

Fortified by the House of Delegates, Officers, our Councilors, Working Committees and a membership than which there is none superior, I have the abiding faith that our organization

*Inaugural address read before the Louisiana State Medical Society at New Orleans, May 3, 1938.

can be depended upon to sail, not drift; lead, not follow.

I have repeatedly said—and I lay no claim to originality in so saying—that the most important activity of our State Medical Society is to organize itself as a social force to lead, as well as serve, our communities and to guide them correctly in the paths of mutual confidence and joint endeavors in the service of humanity.

Our program must be founded on clear vision, high standards and advanced objectives, in step with the rapidly changing times. Our policies must be so broad, that every possible service will be rendered commensurate with ethical, scientific, and practicable procedure; and so irreproachable as to merit not only the confidence of our component medical societies, but to make the entire medical profession proud of being a member of the organization. We must evaluate and broadcast aims, policies and objectives.

The procedure of health administration is to a considerable extent dictated by law. This is as it should be to insure the cooperation of the individual on the one hand and to protect him from bureaucratic oppression on the other. As all will agree, we must strive to achieve orderly, constructive progress along the road of future advancement, not alone to the public, but also the profession itself. It is perhaps not surprising then, that to an undiscerning public, modern medical practice, with its many innovations, should seem confused.

We should, therefore, consider critically the work we are doing, appraise the effectiveness of procedures, discard the less useful and take up with increased vigor those activities which promise the most valuable return for money and effort expended.

From long years of observation, my opinion has crystallized into the very definite conviction that never in the world's history has radicalism won any good cause. It is self-evident that social aspects are changing, a new social order has arisen—including in its scope that of public health, the medical practitioner, and medicine in its varied features. The challenge is, how to meet present issues.

If our organization is to render the most value to the individual members or to society

in general, a frank unbiased discussion of the paramount questions of today cannot be ignored.

I submit, that while no panacea for all the varying phases can be suggested and doubtless no new theories may be advanced, the fact remains that unless and until we accept the challenge of today's existing problems and utilize present opportunities to preserve our heritage in the face of modern adaptations, we shall fail to accomplish the laudable ambition and exemplary goal to which we are dedicated. No more can a blanket solution be found for these differences of opinion, than can the so-called patent medicine cure all ills, from cancer to fallen arches.

I see no need to get excited, but to hold more tenaciously than ever to our ideals with an open mind; to adapt ourselves to the changing order, in a practical, sane manner.

It should be appreciated that no health plan of whatever scope or character can be developed and put into effect unless it meets with the approval of the organized medical profession. Otherwise, its failure is a foregone conclusion.

As I see it, there is no group in society that should more clearly understand, than the medical profession, the implications of this changing social order. Certainly, there is no group with the professional preparation and practice, which has greater opportunity for the study of man through the gamut of physical and social conditions. Nor can any group bring greater influence to bear through interpretation of these changed conditions demanded for a social system which makes for a longer, healthier and happier life.

When we tend to interpret the present trend of medical practice, we have to realize that scientists of whatever field throughout the world—philosophers, educators, engineers—all are being drawn into ever more combined conceptions of man and community.

Many of these changes have not sprung up over night, but are the culmination of existing demands and circumstances. We must be ready to meet changing conditions for our own economic welfare.

That medical science has unfolded to the world discoveries fraught with blessings and benefits to mankind is universally conceded. However, on the medical horizon, certain de-

batable problems have developed. Organized medicine is not immune to critical review. We must realize the changes in our medico-social organization and must solve the answers to the problems they create.

Organized medicine has been engaged, for the past several years, in an exhaustive study of its own shortcomings in order that they might be properly diagnosed and cured. The laity, too, has had its increasingly educated and critical eye on us. The fuller recognition of our personal rights implies a deepening sense of common obligation to meet the present situation. If we have not all of the factual data for action, we at least know some of the facts—enough to enable us to translate some of them into working form. A start must be made, as I think we are all agreed that inactivity must no longer characterize our attitude. The public health worker, the private practitioner, the organized medical profession—all must present a solid and united front in combating the subtle, insidious influences that are trying to disrupt the ethical structure for which the medical profession has sacrificed and endeavored, lo, these many years to build.

A "confederacy" composed of all interested medical groups must function as a unit, or we shall awake to find our medical organization supplanted by lay groups, qualified or unqualified, well directed or misdirected, sincere or otherwise, attempting to solve the problems of public welfare which, by all odds, only the trained medical profession is qualified to initiate. No effort is too great, no labor too exhaustive, if it advances the cause to which we are pledged.

As a premise to discussion of the next problem, it must be admitted that the exigencies of the times have forced governmental aid in maintaining even the most meager foundation of living, a semblance of equity in labor conditions, advancement in educational facilities and relief in various other phases of public welfare. Is it a far cry, then, to the needy individual's claim on governmental agencies for personal medical care, even hospitalization? Is not an equal opportunity to have good health just as much a right of the citizens of our State, as the right to education, protection from starvation, and relief from other ills to

which man is heir? Why then, should not the government lend a helping hand to conserve health? Is not health the greatest asset of any nation—and should not the health of our citizenship be the paramount consideration of any government—local, state or national?

Whether or not we want to face this issue, no discretion is left. To stem the flood waters of the mighty Mississippi with a string would be quite as easy as the task which would confront any individual, or any group so blind as to ignore or refuse to reckon with the popular clamor for governmental assistance.

I have the definite feeling that in our social experiments affecting the lives of our people, we need all the safeguards of scientific discovery and laboratory findings. And lastly, I wish to leave with you the conviction that leadership in the social aspects of medicine must be developed from within and not without the ranks of medicine.

Already, there has been perhaps too much of the defensive in our position—too much trying to justify an attitude—when we might have stated our stand, studied criticism and gone forward with a constructive program of action. Now of all times it is not possible to wrap one's self in the toga of professional pride and stand on the principle that orthodox scientific medical practice is not a "commodity." This sentiment may seem commendable, but it is a futile, outmoded gesture.

In this propaganda-poisoned era, to my mind there is needless hysteria, too, about medical care. Here, also we are no doubt all in agreement that the only intelligent procedure is for the private practitioner and our public health worker to concede that the public, private and voluntary group each has its part to play, but that the highest service to society cannot be reached until there is the proper interrelationship and close unity of all, which is necessary to the success of our objective for more adequate health service for those unable to procure it for themselves.

In order to effect this adjustment, we must have a reorientation of our public health machinery; the varying groups now functioning under one means or another, many indefinite in purpose and with diversity of direction, must be coordinated so that the best known and

wisest scientific measures, the necessary requisites to good health may be used to improve the quality of the health service and to extend the medical care it is our purpose to bring to those of our people who are in need of such service.

To accomplish this, no basic change in our present system of medical practice is necessary; no standardized, hidebound program for every doctor, health officer and medical society in every community is indicated; nor is there need for any fantastic methods. Each community can still have control of its local program, founded on the specific needs of the community to be served.

This is in line with the expressed belief of Surgeon General Parran who said: "Every health organization should have local control and every health program should be built on the specific needs of the community it is designed to serve."

What is essential—an aggressive health organization in every community with proper leadership to mobilize the forces now in the field and put into effect a program best suited to the community needs, taking into account the relationship between poverty and disease. Particular attention should be given to rural sections where, of necessity, there is a serious shortage of hospital and other health promotion facilities accessible to the average urban resident.

On the doctors and health workers in the parishes do we depend for necessary vital statistics and communicable disease reports which in the final analysis determine the intelligent, effective functioning of the state and local health bureaus. I would emphasize with all the power at my command that every individual doctor must promptly send in complete birth and death certificates if the State of Louisiana is to remain in the United States Registration Area, in line with the other forty-seven states of the Union. I do not underestimate the demands on a doctor's time but the urgency of the present situation necessitates my stressing the dire need of this cooperation.

Every doctor licensed to practice in Louisiana owes it to himself, as well as to the organization, to become a member of the State Medical Society. In 1937, in the State of Louisiana, a

total of 1,834 doctors were registered with the State Board of Medical Examiners. Our active membership last year was 1,316—this means that 28.2 per cent of the profession is not reaping the benefits to be had from membership in our organization. Why?

Our component units should have a membership drive to bring into the fold those eligible in their respective communities. A check of our records prompts me to urge more extensive local organization to increase the number of parishes included in society membership. At present, 47 parishes, only, are represented in the 41 organized parish societies. Again, why? I trust during the coming year at least a fair percentage of the present 17 non-organized parishes will join the ranks. Dues are nominal, and not even the economic cataclysm which has so affected everyone should be allowed to stand in the way of this interchange of thought. No investment that any doctor can make will bring returns comparable to those from the small fees to the one organization whose very existence is founded for the benefit of the membership.

The achievements of the State Medical Society, to soar to the heights desired, must command the personal service, active interest and unswerving loyalty of every individual member. Further, with this primary purpose in mind of working for the best interests of the physician and to insure more adequate care for the needy sick, it is quite obvious we should develop the closest spirit of harmony and cooperation between the parish and district societies and our State organization. To glean added enthusiasm, I believe, too, in the value of exchange visits between state medical societies, especially of adjoining states. The ideas, benefits and inspiration derived, more than justify the time and expense involved.

A program to utilize present resources predicated on the wholehearted support of our membership would react to the advantage of the medical profession to an extent almost as great as the citizenship served.

Many studies, by many committees under the auspices of many governmental, volunteer, and other agencies have been pursued. To date, no accepted general program has been made available. However, the hope now prevails that

from the preliminary report which has been submitted by the Interdepartmental Committee of the United States Public Health Service should evolve a united plan to meet the issue of medical care for the underprivileged groups of our social order. The committees of our Society, I know will lend their aid if help from the Louisiana State Medical Society is suggested.

In summarizing the means of accomplishing some of our aims and objectives and making for the success of our organization to itself and to society, I would stress:

1. Unification of administrative measures in public health.
2. Coordinating public health and social welfare services where, obviously, such action would mean improved care for those affected.
3. A more extensive use of our official organ—the *Journal*—which in turn interprets the actions of the Society and brings to the door of the members the happenings in the medical world.
4. Balancing of resources now available by supplying deficiencies where the need is apparent in the various aspects of medical care.
5. The building of a more efficient organization through its component branches by more frequent contact and more personal responsibility, and bringing into our Society the entire medical profession of Louisiana.
6. The creation of a permanent Speaker's Bureau to spread the gospel of the sound policies and objectives of our organization, the newest discoveries in medical and scientific fields, and responsibility of the doctor, the health officer, the public health worker and all those jointly interested in the program of helpfulness to humanity. In connection with the Bureau, too, could be a supply of literature on public health education, or prepared articles on medical and allied subjects, for loan or distribution to local medical societies and civic groups.
7. Consideration of a Hall of Health based on the very excellent exhibit of the Wisconsin State Medical Society housed in

the main arena of the Milwaukee Auditorium. The nature of the exhibit is similar to the display in the Hall of Science in Chicago, which proved a very popular feature of the Century of Progress Exposition in 1933-34. The booths include history of roentgen ray, the story of anesthesia, laboratory diagnosis of disease, the pattern of blood vessels, cancer, public health, and other essential, pertinent subjects. If our Society could foster such a demonstration, I believe its resulting public good would more than justify the labor and expense involved.

8. I have left to the last, though far from the least, recognition of our Woman's Auxiliary. We should evidence our appreciation of their excellent work by aiding and cooperating in their efforts to uphold and extend their noble purposes. Thus can we assist in furthering their inspiration and goal to insure a healthy, happy and industrious citizenship capable of enjoying the fruits of their labors without worry or suffering.

I am impelled before closing to express my grateful appreciation of the unmerited honor conferred upon me at the meeting in Monroe, last year. Humbly do I thank you and infinitely more shall I appreciate your support, encouragement and inspiration in developing this year's program.

On the threshold of another milestone, it is our proud heritage that the achievements of the State Medical Society are still on the credit side of the ledger to justify our continuation.

With this background, our obligations for altruistic service are doubled. Invaluable as our aims are in themselves, they take on a deeper significance when they are considered as integral parts of a comprehensive program in our State, District and Parish Societies.

It is my firm belief that our objectives are not beyond the attainable and can be realized by mutual agreement among the various interests and organized medicine. As I see it, our prime purpose is to have our State Medical Society fulfil the spirit and substance of service founded on loyalty and tradition. Thus, may our vision of 'the past become the reality of today, and the guiding star of the future.

If we stand by our ideals, then will it be not "only in dreams that we reach the sapphire walls by Jacob's ladder."

AN ADDRESS*

O. P. DALY, M. D.

LAFAYETTE, LA.

You have heard many speeches and eloquent speeches by the men who are responsible for the entire free hospitalization movement. These men have told you much better than I can, how this movement originated, how it was conceived, formulated, legislated and finally brought to completion; therefore I am not going to attempt again to cover these points. This would simply be repetition. The reason that I have been asked to address you is because I was selected as Superintendent of the first unit established by the State Hospital Board, namely the one at Lafayette, and by virtue of that fact have possibly had more experience in this particular kind of work than most of you here, and have had an opportunity to study the way the system is functioning. All of you know that the Hospital Board was created by the Legislature in 1936. The purpose of this Board was to arrange facilities for the care of the destitute sick people of our state. The members of the State Hospital Board are Governor Leche, Ex-officio Chairman, Mr. E. A. Conway, Mr. Charles I. Denechaud, Mr. J. L. Keenan and Mrs. Bolivar Kemp. This Board made the very wise appointment of Mr. A. R. Johnson as State Hospital Director; in the opinion of everyone who knows him, the very best man available.

The reasons for the appointment of this board and the establishment of these hospitals are very clearly set forth in the act which states, "Whereas, the facilities of the state owned institutions for such purposes are in central locations, and, whereas due to distance, care and treatment of indigent and destitute sick persons are often delayed, thereby endangering the public health," there shall be instituted a number of small charity hospitals and wards throughout the State. As you know the State purchased the St. John Hospital in Lafayette and on Septem-

ber 1, 1937, began operation of the first State Board Hospital. This hospital is now operating in a limited capacity, pending the completion of the building in process of construction which will ultimately house 250 patients. All of you are, of course, very familiar with the circumstances connected with the magnificent institution which is being constructed here in Pineville and which will care for approximately the same number of patients.

It is my understanding that another unit will be constructed in the near future in Monroe. The State has purchased a beautiful home in Independence and a small unit for about 64 patients will shortly be in process of construction there. The town of Jonesboro has contributed a hospital building and site which I understand will be turned over to the State Hospital Board in the near future and will accommodate approximately 20 patients. Two other small units will probably be constructed in other locations in the State. The object of course is to bring the hospitals to the patients rather than the patients to the hospitals.

Now just a word as to the manner in which patients will be admitted to these hospitals. It must be distinctly understood that my remarks today do not apply to the Shreveport Charity Hospital nor to the New Orleans Charity Hospital. These two institutions are under a separate management and are not under the control of the State Hospital Board. The State Hospital Board very wisely, in my opinion, has placed every restriction possible around the admission of patients to State Hospital Board controlled institutions. They have taken away from the physicians the responsibility of deciding just who is eligible and who is ineligible. At first thought, this may not appeal to you, but I believe that a little further consideration will show you that it is one of the wisest things that could be done and one that will relieve you of a great deal of annoyance and trouble. As practicing physicians, all of you know that it is very embarrassing at times to have to refuse to give a patient a certificate stating that he or she should be admitted to a Charity Hospital. By refusing these certificates, we often make enemies of our patients; unfortunately, some other physician, not so conscientious, may give the certificate demanded by them and the con-

*Delivered at the exercises at the breaking of ground for the Mid-State Hospital, Alexandria, La., March 5, 1938.

scientious physician then has to bear the brunt of the patient's displeasure. Under the system inaugurated by the State Hospital Board, all of this has been changed. The only things that we as doctors, are requested to do is to give a certificate stating that the patient is in need of hospital care. The patient then must take this certificate to the Welfare Department of the Parish in which he or she resides. The Welfare Department, through its trained workers, investigates the financial status of this patient and decides whether or not the patient should receive free hospital care in one of these hospitals. You are perfectly free to give a certificate to any person applying who, in your opinion, is in need of hospital treatment; that is all you are called on to do. Your responsibility ends there. It makes no difference to you whether your patient is an indigent or not. Let the Welfare worry about that. That is one worry which has been taken off your shoulders.

Now the question arises as to emergency cases. Sometimes as we all know patients must be rushed to a hospital. Every practicing physician has the right to send into any of these hospitals any patient at any hour of the day or night who, in his opinion, requires emergency treatment. It is not necessary for emergency cases first to contact the Parish Welfare Department. In conjunction with this, I beg of you, however, that you use every discretion possible in this matter in order to prevent abuse of this privilege and unfair competition with private hospitals. Now what happens to these emergency cases? They are admitted and cared for irrespective of their financial status. These cases are then promptly reported to the Parish Welfare Department by the hospital. A rigid investigation of their financial condition is carried out and if they are declared ineligible for care by the State, they are then billed by the hospital for services rendered to them and are made to pay the State as they would any private institution. This is as it should be because we have no right to refuse to care for any one during an emergency, but, when the emergency period is over, these patients should be transferred to private institutions and they should be forced to pay the State for the care that has been given them in the state owned institutions.

Public Welfare agencies can hardly make

any move which is not directly or indirectly concerned with the health of their clients. Good housing, good food, financial assistance to obtain them, and work for employables are all health measures. Physicians alone can properly evaluate the effectiveness of such measures on the health basis, and, as they are called in by industry, so should they be called upon in the formulation of our public welfare program in Louisiana.

Particularly is this true of the State Hospital Board, and, as a servant and co-worker, I wish to make a plea for sound criticism from all doctors of the measures instituted by State governmental authorities and particularly of the manner in which they are administered and performed in State and local communities; I urge the non-medical authorities to seek out and listen to the advice of physicians in all that they undertake that is concerned with the health of their people, and that means practically everything they do; and I hope that every physician, whether serving the community in a public or private capacity will study the problems with which we are faced, in order to know whereof he speaks when he criticizes public health and public welfare measures, but never to cease in his criticism.

When this hospitalization program was first contemplated, there was a great deal of uneasiness among the physicians of the State of Louisiana, because when all is said and done, the physician is dependent upon the proceeds derived from the practice of this profession for his livelihood and the care of those near and dear to him. Any measures instituted by State or Governmental agency affecting his welfare are as a matter of course of great concern to every physician.

The physicians in the parishes to be served by the Lafayette Charity Hospital in common with all others, were uneasy and very much concerned. It is with a great deal of pride that I am able to testify to you today that this fear, this uneasiness and this concern have been relieved in the minds of the doctors in our territory because they have now familiarized themselves with the manner in which this hospital is to be conducted, with the scope of its activities and are assured to their own satisfaction that the State Hospital Board's intention is to take

away from the doctors just one thing and that thing is this: to remove from their shoulders the unjust burden of caring for the indigent sick and ill of our State. Not only as physicians but as tax-payers are we vitally interested in seeing that these institutions are for the care of the destitute people of our State and for no other class of people. Admission of any other individuals would be an unjust burden upon the tax-payers of the State of Louisiana and an unfair discrimination against the practicing physicians and dentists of the State. Such is not the intention of the State Administration, or of the State Hospital Board. As a further proof of the sincerity of Governor Leche, Mr. Johnson and the State Hospital Board, they have requested that the parish medical society of each parish appoint a committee of physicians. This committee, or these committees, from the various parishes are to meet in the hospital at intervals most suitable to them. All records pertaining to the admission of patients are placed at their disposal and they are urgently requested to report to the superintendent of the institution any irregularities observed. The members of these committees should challenge the admission of any patient who in their opinion does not deserve treatment in a State owned institution. The superintendent then requests a written report of the investigation carried on by the Parish Welfare Department. This information is placed at the disposal of the committee. Should they decide that the patient is ineligible, the hospital will bill the patient for the services rendered and the Attorney General of Louisiana is the collecting agency. There is such a committee functioning in Lafayette Parish. I assure you that it is an active committee. The doctors on it are intensely interested in protecting their own interests and every assistance is given them to see that this is done.

The other committees have not been appointed so far because of our limited capacity. However, as soon as the hospital is completed, the parish medical societies of each parish served by the Lafayette Charity Hospital, will be requested to name such a committee and I earnestly beg of you gentlemen to serve actively on this committee.

Everyone connected with this program realizes its magnitude, realizes its far reaching conse-

quences and I honestly believe that everyone is sincere in the desire that no harm be done to organized medicine or dentistry and that private institutions will not suffer from unfairness and unjustifiable competition.

ENDOCRINE DEFICIENCY IN SYPHILIS

HARRIS HOSEN, M. D.
PORT ARTHUR, TEXAS

The mental deficient child is a most important problem both socially and medically. To obtain results of a favorable nature in this field, it is essential to correct the responsible condition in early childhood, for after a deficient brain reaches a maximum physical growth little can be done to change its essential protoplasm. Thus it is the problem of the pediatricist to isolate those patients amenable to treatment before irreparable damage is done.

The mental deficient child ranges from a slight deviation from normal to the hopeless idiot. This type of child may be handicapped by cerebral injury or inherent states comprising morons, idiots and imbeciles. The mental deficient, due to such conditions, has little hope for rehabilitation of the mind, but there are a large number of cases of deficiency which have an endocrine background and these can be saved for society by early diagnoses and treatment.

The formation of a healthy mind in utero is determined by proper tissue differentiation for which the thyroid gland is solely responsible. Beginning with the embryo this is the most important gland in the body with the pituitary in second place. After birth the pituitary gland becomes primary and the thyroid secondary. When deficient the thyroid gland presents characteristic mental and physical retardation and functional non-endocrine system reactions, frequently attributed to other causes.

The pituitary and associated glands play an important part in development; but, a deficiency of these glands, unlike that of the thyroid, does not cause mental deficiency. Whenever the pituitary gland is responsible for some malady with an associated mental deficiency, it can be dogmatically said that this mental state, if endocrine in origin, is not due to the pituitary

imbalance, but to an associated thyroid deficiency. With this in mind, every case with any degree of mental deficiency should be considered as thyroid in origin until proved otherwise. Far too often a deficient mind is blamed on malnutrition, cerebral injury, rickets, syphilis or inherent states of mental deficiency. It is important that in these cases the thyroid origin should be eliminated before treating any concomitant condition which may be present.

DIAGNOSIS

Fortunately, the diagnosis of thyroid deficiency can be made with little or no chance of error, by the proper study of the epiphyses of the skeletal framework. Invariably hypothyroidism is accompanied by a retarded appearance of the epiphyses and centers of ossification. Such a phenomenon has been attributed to rickets and syphilis in addition to thyroid deficiency; but, Signorelli, Hosen, and Miles¹ proved conclusively that rickets and syphilis cause an early or normal appearance of the epiphyses.

A cardinal rule thus should be that whenever a state of late mental development exists, with evidence of retarded ossification, the diagnosis of thyroid deficiency should be made regardless of concomitant diseases.

It is with this idea in mind that I present three cases of congenital syphilis associated with mental deficiency. The mental state in these cases had always been intimately considered as secondary to the congenital syphilis and treated likewise. The consequence of this was an improvement of the syphilis but no improvement of the mind.

CASE REPORTS

Case 1. H. B. Jr., an infant of 22 months of age, came to me with the chief complaint of retarded growth, retarded mentality, restlessness, and anorexia. The child was born of a syphilitic mother and had a positive Wassermann at birth. He was adopted at the age of one month at which time luetic treatment was started and was continued until the child was eighteen months old. Treatment was stopped, for the foster mother could see no progress in the child's mental and physical condition. At the age of twenty-two months the patient had a vocabulary of two words—"mama" and "papa"—and could not stand alone without support. His first tooth came at one year; he sat alone at fifteen months; he stood up with minor support at twenty months of age.

The physical examination revealed a patient fairly well developed and nourished for a child of about one year of age. The mental study was one year old. His features and expression were normal in every respect. The roentgenologic findings were as follows: The distal epiphysis of the tibia was present but small (appears first year); three tarsal bones were present, (five appear normally); the distal epiphysis of the fibula was absent—(appears second year); no centers were present in the wrist, (at this age the distal epiphysis of the radius and two carpal bones should be there); the capitellum was absent in the elbow (appears second year). The epiphyseal development was normal for a child of six months and the mental development normal for a child of one year.

The diagnosis of congenital thyroid deficiency and congenital syphilis was made. The patient was placed on thyroid to tolerance with immediate improvement manifested by loss of anorexia and restlessness. Within one month the patient developed a vocabulary of ten to fifteen words and could walk well. After one year of treatment the



Fig. 1. Case 1, 22 months' old child, with mental and physical development of one year; epiphyseal development of under one year.

patient had the mental and physical development of a child over two years of age.

Case 2. This patient of five years and two months of age had the chief complaints of right



Fig. 2. Case 1. Roentgen ray showing epiphyseal development.

sided convulsions. (right side of face and body), and retarded mental development.

The past history was that at two years of age the patient had right sided convulsions. This occurred four or five times a week for one year, the attacks lasting from a few minutes to four hours. A diagnosis of syphilis was made and treatment was started and continued for six months at a charity hospital. This was followed by a marked improvement in the luetic condition but the mental state did not improve in comparison. At four years of age the patient had an attack of convulsions which resulted in hemiplegia lasting one month. Treatment for syphilis was again instituted at a second charity hospital for another six months. Again the luetic condition improved but the patient continued to have slow mental growth.

The patient's birth weight was seven and a half pounds; the first tooth came at one year; he sat

alone at one year, walked alone at three years; and he talked at three and a half years.

Physical examination revealed a patient fairly well developed and nourished for a child of four years. The mental development was of a three or four year old child. The features and expression were those of a normal individual.

The laboratory findings showed that the father and mother had positive Wassermanns. The patient had a 4 plus spinal and a 3 plus blood Wassermann.

A roentgenologic study showed the proximal epiphyses of radius absent—(appear normally in fifth year of life); the distal epiphysis of the ulna was absent—appears normally the sixth year of life); the distal epiphysis of the radius was present but very small—(should appear second year); four carpal bones were present—(normally at this age there are six bones present); the proximal epiphyses of the thumb were absent—(appear normally near three years of age). The epiphyseal development was of a child approximately three and a half years of age. The mental development was of a child three to four years of age.

A diagnosis of congenital syphilis with cerebral involvement plus congenital thyroid deficiency was made.

Luetic treatment was continued plus adequate

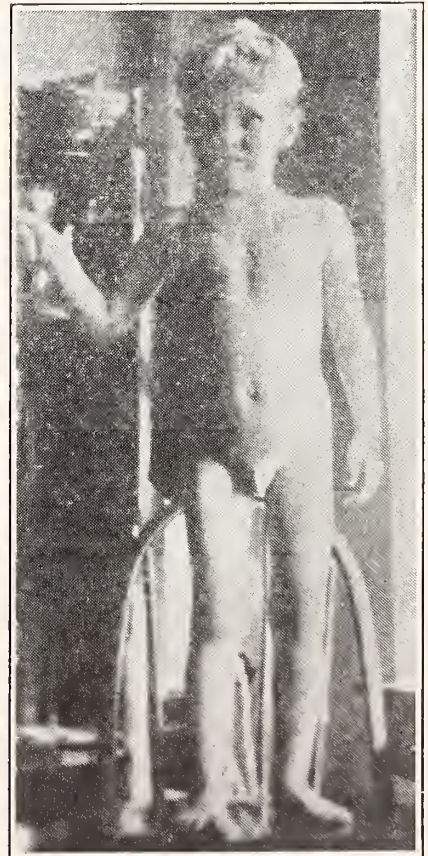


Fig. 3. Case 2, child aged 5 years, 2 months, with epiphyseal and mental development of 3 to 4 years.

thyroid medication. The patient immediately showed marked improvement. This treatment was followed for three months when the family moved from town. During the three months of treatment with thyroid the parents noted more improvement in the child's mental condition than in the past year or so.

Case 3. This patient J. K., aged two years and nine months, had the chief complaints of mental deficiency and general weakness. This child weighed six pounds at birth, was delivered normally. At one year and nine months of age the child's family was given a serologic examination with these findings: father, four plus; mother, four plus; brother, aged six, four plus; patient, four plus Wassermann. This child was then placed on luetic treatment with excellent



Fig. 4. Case 2. Roentgen ray showing epiphyseal development.

physical improvement. During this time there was no mental improvement. The patient was brought to me one year later. His first tooth came at one year; he held his head up at eighteen months; and he sat alone at two years. The child was unable to stand alone or talk at two years and nine months.

Physical examination showed a patient undernourished and underdeveloped. His general expression was that of idiocy.

A roentgenologic study showed the capitellum present but small—(appears normally second year of life); two carpal bones were present (normally there should be three); the epiphyses of the metacarpal bones were all absent (normally appear third year of life); the distal epiphysis of the radius was absent (appears second year of life); the proximal epiphysis of the thumb was absent—(appears at three years). The epiphyseal develop-



Fig. 5. Case 2. Roentgen ray showing normal epiphyseal development in child of 5 years, to be contrasted with Case 2, Figure 4.



Fig. 6. Case 3. Roentgen ray showing epiphyseal development in child 11 years of age.

ment was of a child of one year. The mental development was of a child of six to nine months of age.

A diagnosis of congenital thyroid deficiency plus congenital syphilis was made.

The syphilis was not treated in order to watch the action of thyroid medication. After one month of treatment the patient died of intercurrent infection. During the course of this short treatment there was phenomenal improvement manifested by keen interest in surroundings, playfulness, recognition of objects and people previously ignored. At the end of one month the patient could stand easily with only slight assistance. The facies showed surprising improvement in this short course of time.

SUMMARY

These three cases of syphilis all had concomitant states of hypothyroidism. All of these patients showed definite improvement of syphilis but no improvement of the mental condition when given luetic therapy. A study of the epiphyseal development made it possible to diagnose the presence of thyroid deficiency, the treatment of which gave universal improvement.

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THE RELATIONSHIP OF RHEUMATIC FEVER TO SUBACUTE BACTERIAL ENDOCARDITIS

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Rheumatic fever must be considered as essentially a disease of the heart, and as such, it is a severe and crippling condition. Yet, it has only recently been considered sufficiently as a menace to engage the attention of the medical profession as a whole.

Mortality records show that cardiac disease is one of the major causes of death; of these the percentage of rheumatic origin is certainly high. Cabot, upon analyzing 600 cases of fatal heart disease, found 278 or 46 per cent of which he classifies as rheumatic in type. Askins estimates that 50 per cent of heart disease is rheumatic in origin.

Poynton has remarked, "The resigned acceptance of the fact that hundreds of young lives are damaged by rheumatism contrasts

vividly with the extraordinary efforts that are made to prevent tuberculosis." Thus, it behooves one to have as complete and thorough an understanding of the condition as is possible.

Any discussion of two apparently separate and distinct clinical entities, in an attempt to determine the relationship that exists, if any, must necessarily be one of their etiology primarily. Accordingly, a resume of the facts in each instance will be undertaken.

ETIOLOGY OF RHEUMATIC FEVER

Rheumatic fever is essentially a disease of temperate and sub-tropical climates, although there are notable exceptions to this rule. Newsholme¹ has shown that there is a definite cycle in the incidence, with peaks every four to six years, coinciding with periods of deficient rainfall.

Atwater¹ and Coburn³ have stressed the correlation existing between the incidence of rheumatic fever and other streptococcal infections, notably scarlet fever and upper respiratory infection. There is a very definite and marked seasonal variation. Church,² in London, points out a rapid rise in late summer, with highest incidence in the fall months, with a sudden drop at the beginning of winter. In America, the greatest number of cases occur in late winter and spring.

Age is one of the most important factors, the disease being one of youth. Church, analyzing 943 cases, found that 58 per cent of primary attacks occurred before the age of 20 years; 26 per cent between the ages of 20 and 30, and 13.5 per cent between 30 and 40 years.

There are no marked differences in the sex incidence; in the first decade, females are more often affected than males in the ratio of 3:2. In adults, the reverse is true, males being apparently more susceptible than females. Pericarditis and mitral stenosis are more prone to occur in young females. Pregnancy occurring in a rheumatic patient, usually renders the course more severe and the prognosis more unfavorable.

Social conditions exert a definite influence. It is more common in the middle classes than in either extreme of social groupings, being favored by dampness, exposure and undernutrition. Recent studies have stressed the role

of vitamin C. However, until more definite proof is available, it should be considered as part of a general vitamin deficiency, concomitant with malnutrition.

Racial differences do not seem to affect materially the predisposition to infection. Further, the role of heredity is extremely difficult to evaluate. Cheadle² stated that 70 per cent of private patients had a definite familial tendency while other observers believe its influence to be negligible.

EXCITING FACTORS

Achalme first attempted to demonstrate that rheumatic fever was due to a large bacillus. In 1897, Triboulet and Coyon² isolated a diplococcus from the blood of 16 cases of rheumatic fever and one of chorea. They reported the experimental production of mitral stenosis and endocarditis in rabbits by inoculation with these organisms. Apert⁴, in 1898, demonstrated a diplococcus in the blood of a patient with chorea. Westphal, Malkoff and Wassermann⁴ in 1899, isolated streptococci from the brain, spinal cord and heart valves of rheumatic patients. They also reported the experimental production of arthritis in rabbits.

In 1900, Poynton and Paine² cultured a non-hemolytic streptococcus from the blood of eight patients with rheumatic fever; in rabbits these organisms caused arthritis, valvulitis and pericarditis. This organism, called *Diplococcus rheumaticus*, was probably identical with that described by Westphal, Malkoff and Wassermann.

Phillips⁴ in 1903, reported negative blood cultures in 31 cases of rheumatic fever. In 1908, Loeb⁴ found *Diplococcus rheumaticus* in the blood of eight patients; 37 other patients had a negative blood culture. Beattie⁴ reported *Diplococcus rheumaticus* from three cases but found the heart muscle to be sterile.

In 1913, Rosenow^{2, 4} cultured a streptococcus from the blood of seven out of eight rheumatic patients. He classified the organisms found into three groups, as follows: (1) green-producing; (2) hemolytic and (3) indifferent. He also reported the experimental production of arthritis, pericarditis and endocarditis.

Henry⁴, in 1914, cultured non-hemolytic streptococci similar to those reported by Poynton and Paine, from 43 out of 60 cases of

rheumatic fever. There were four positive joint cultures in five cases and seven positive cultures of pleural exudates. In all, there were 78 per cent positive cultures for the organisms.

Swift and Kinsella⁶ reported 12 per cent positive blood cultures of non-hemolytic streptococci in 58 cases.

In 1925, Clawson and Bell⁷ reported a number of positive cultures using a different technique; they also produced experimental lesions similar to, if not identical with, those of rheumatic fever.

Lewis and Longcope² caused arthritis in rabbits by inoculation with streptococci isolated from cases of endocarditis, chorea and arthritis. These organisms were identical with those described by Poynton and Paine.

Small,⁸ in 1927, isolated a streptococcus from cases of rheumatic fever which he thought was specific; he termed it *Streptococcus cardioarthritis*.

Birkhaug⁹ described a non-methemoglobin forming streptococcus in rheumatic fever patients. He experimentally produced arthritis, subacute endocarditis, myocarditis, and epicarditis. There was a peculiar tendency to the development of mitral stenosis in these animals and large mural vegetations were repeatedly found at autopsy. Many bacteriologists consider this organism to be identical with that described by Small.

In 1928, Zinsser and Wu⁴ reported positive cultures of streptococci from the spleen of rheumatic patients.

Surangi and Forro⁴ obtained 68 per cent positive cultures in 25 cases of rheumatic fever.

Nye and Seegal,⁴ in 1929, reported no positive cultures in 50 cases of rheumatic fever.

Cecil et al.,⁴ in 1929, obtained 83 per cent positive blood cultures in 31 cases.

In 1933, Callow⁵ found 79 per cent positive cultures in 174 rheumatic patients, 48 per cent in cases of chorea, 66 per cent in patients with upper respiratory infection, 30 per cent in cases of other febrile diseases and 8 per cent in "normal subjects." The organisms isolated were: *Streptococcus viridans* 35 per cent; *Streptococcus anhemolyticus* 6 per cent, and pleomorphic bacilli 51 per cent.

IMMUNOLOGIC STUDIES

Swift and Kinsella,²¹ in 1917, studied 10

strains of non-hemolytic streptococci isolated from the blood of rheumatic patients. They were unable to find any immunologic grouping by means of complement fixation tests.

Libman,²⁹ in 1923, reported that there were no constant serologic reactions to anhemolytic streptococci in rheumatic patients; in subacute bacterial endocarditis a positive complement fixation test was uniformly present.

Clawson and Bell⁷ studied the immunologic characteristics of 11 strains of streptococci isolated from the blood of rheumatic patients and three strains from cases of subacute bacterial endocarditis. They found definite interrelation among the strains, and stated that the organisms could not be differentiated by agglutination methods alone.

Small has studied the immunologic characteristics of *Streptococcus cardio-arthritis*. He found the opsonic index of the patient's serum to be low in the acute stages of the disease and elevated during favorable stages, the titer closely paralleling the clinical condition. Further, he produced a specific anti-serum, which when given to these patients caused marked improvement in their general condition and in some, apparently halted the process completely.

Birkhaug²⁴ described the skin phenomena of rheumatic patients as being analogous to the Arthus phenomenon. He determined the skin sensitivity of rheumatic patients and normal controls to the non-methemoglobin forming streptococcus. Rheumatic children and adults showed 76 per cent and 56 per cent positive reactions respectively; while controls showed 11 per cent and 18 per cent positive reactions.

Cecil et al⁴ studied 36 strains of streptococci and found that there was a definite tendency for them to fall into six biologic groups.

Goldie and Griffiths³⁰ have studied the immunologic relationships of both hemolytic and non-hemolytic streptococci to rheumatic fever. They found that 88 per cent to 92 per cent of rheumatic patients had definitely increased anhemolysin values of the sera; controls showed increased values in from 3 to 13 per cent of cases. Further, 77 per cent of rheumatic patients had positive skin reactions to toxic filtrates of the organisms; only 27 per cent of the cases were positive for *Streptococcus*

viridans, whereas the control showed 24 per cent positive reactions to the same organism. Positive agglutinations for *Streptococcus hemolyticus* were found in 80 per cent of cases; to *Streptococcus viridans* in only 6 per cent, while the controls showed 5 per cent positives to the same organisms. These results were correlated with the clinical findings and it was shown that the highest percentage of positive skin reactors occurred in the stable cases, that is, those without joint symptoms; in the progressive cases, the number of positive reactors was low. They then concluded that a negative skin test indicates a lack of antibody formation; in active states there is a deficiency of endotoxin, while in inactive states there is sufficient endotoxin produced to cause a positive skin reaction.

Todd¹⁵ was one of the first to demonstrate and point out the significance of the antistreptolysin level of the blood serum of rheumatic individuals. This work has been confirmed and amplified by the intensive works of Coburn, Pauli and others in this country.

The studies of Coburn and Pauli,^{3, 11, 12, 13, 14} have led them to the following conclusions about the etiology of rheumatic fever. There is a definite correlation between the geographical distribution of *Streptococcus hemolyticus* and rheumatic fever. Corresponding to the seasonal rise of hemolytic streptococcal infection, the curve of incidence of rheumatic fever shows a similar form.

There is a definite environmental influence. When rheumatic patients are in the tropics, hemolytic streptococci disappear from the flora of the throat and recrudescences are definitely diminished. When returned to their original habitat, the reappearance of hemolytic streptococci in the throat flora is concomitant with the development of recrudescences.

They also believe that rheumatic fever is definitely associated with hemolytic streptococci of different biologic types. These organisms are characterized by the ability to produce strong skin toxins and streptolysins and were indistinguishable from scarlatinal strains of the organism. Infection with these hemolytic streptococci causes the production of a substance, antistreptolysin, presumably from the antibody producing tissues, which alters mesodermal structures. It is produced, how-

ever, only when there is an immune response to infection. (In normal persons, the mean antistreptolysin serum level is 50 units; the mean level in patients with acute rheumatic fever is 500 units.

In the rheumatic patient who develops a recrudescence, there is a concomitant rise in the antistreptolysin titer of the serum. The greater the antibody response, the greater is the severity of the rheumatic recurrence. The persistence of high serum values months after the attack is evidence of the long continued presence of the antigen, presumably the causative organism itself.

In the absence of an antibody response, the rheumatic recrudescence fails to develop. Furthermore, those strains which failed to produce skin toxin and streptolysin, and did not give rise to the development of high titers of antistreptolysin, were similarly ineffective in initiating a rheumatic recurrence.

Coburn and Pauli also demonstrated that active immunization with toxin neither prevents nor inhibits the development of the rheumatic process. In addition, the passive immunization prior to the expected attack does not decrease, and in some instances, may increase the intensity of the rheumatic recrudescence.

However, there is some conflicting evidence. Wheeler et al ¹⁷ studied 4867 throat cultures from 123 rheumatic patients and 1231 cultures of non-rheumatic individuals. They could find no significant difference in the frequency of occurrence, nor in the time of appearance, of hemolytic streptococci in the flora of rheumatic as contrasted with non-rheumatic patients. Further, there was no marked difference in the percentage incidence during health, upper respiratory infection or in rheumatic recurrences.

Wilson ¹⁸ studied 222 rheumatic patients for two years; he found that less than 10 per cent of recrudescences were preceded by upper respiratory infection. He concluded that the designation of streptococcal respiratory infection solely on bacteriologic grounds was not justified and that the presence or absence of hemolytic streptococci in the flora of the throat is probably of minimal etiologic significance.

Swift ²¹ states that most patients suffering recrudescences give a history of repeated non-

specific upper respiratory infections, that is, rhinitis, tonsillitis, sinusitis, otitis, or bronchitis, over a period of years.

Collis ²¹ reported that nine out of eleven children who developed hemolytic streptococcal upper respiratory infection also developed rheumatic recurrences. In cases of non-specific respiratory infections there were no exacerbations of rheumatic symptoms.

Weinstein and Styron²¹ studied the throat flora of 321 cases. They found no significant differences in the incidence of hemolytic streptococci in rheumatic and non-rheumatic children. The percentage was not increased during recrudescence and the latter occurred just as frequently without upper respiratory infection.

Wilson et al ¹⁸ determined the antistreptolysin level of the blood serum of rheumatic and non-rheumatic individuals. They found increased levels in only 20 per cent of patients with recurrences. Also, due to the wide range of normal values, 20 to 100 units, they concluded that such determinations were not of specific etiologic significance.

Birkhaug²¹ and Kaiser²² found rheumatic patients more susceptible to toxic filtrates of indifferent streptococci. The Dick test was uniformly negative in this series hence they concluded that hypersensitiveness is largely to streptococcal products and has little relation to type specificity of the organism.

DISCUSSION

From the above observations, it is evident that the etiologic agent of rheumatic fever is not definitely known. Koch's postulates have not been fulfilled, and until more conclusive experimental proof is available, one must theorize as to the pathogenesis of the condition.

The most prevalent belief at present is that rheumatic fever is a condition occurring in a sensitized individual due to streptococci, with certain characteristic constitutional and tissue reactions. Whether or not this is due to a specific strain has not been satisfactorily determined, although it seems that reactivations in the rheumatic subject can be brought about by various types and strains of streptococci.

Irving-Jones,² after having worked with both hemolytic and non-hemolytic streptococci, con-

cludes that: (1) The streptococci of the upper respiratory tract of rheumatic children are identical culturally and morphologically with those of normal children; (2) persons suffering from rheumatic fever show marked skin sensitivity to filtrates from a wide variety of streptococci either from rheumatic or non-rheumatic subjects; (3) the skin sensitization is most marked in the acute stages of rheumatic fever and chorea, especially when acute carditis is absent. It is less marked when patients are clinically well. (4) In cases where skin reactions are followed over a long period of time, it is possible to divide the reactions into definite phases which are analogous to certain cases of experimental allergy; (5) these observations indicate a definite relationship between rheumatic fever and streptococci, but do not implicate any single or specific strain. It is suggested that the rheumatic state is an allergic response of certain predisposed individuals to the common streptococci of the upper respiratory tract.

Coburn introduced the term "rheumatic state." This is probably the best term for the condition of the individual who has become sensitized by a streptococcal infection to such a degree, that he reacts to the further absorption of toxic products by the constitutional and local tissue reactions which one calls rheumatic fever. Furthermore, he believes that there are three stages in the pathogenesis, namely: (1) The stage of acute upper respiratory infection by hemolytic streptococci; (2) a symptom-free period, in which the organisms disappear from the throat flora; (3) the acute rheumatic attack concomitant with the rise of the anti-streptolysin level of the blood serum. This conception is based on the observations previously stated. The allergic hypothesis is not new, but was first advanced by Menzer about 30 years ago, and it has been recently reactivated by Swift, Zinsser, Weil, Coburn and others.

As Swift points out the allergic theory does not establish unequivocally the etiologic role of streptococci, but merely gives us the best explanation of how all of the different strains could produce the same clinical and pathologic picture. The sensitization which results in the chronic state must be brought about by chron-

ic infection. In that event, it would seem that the indifferent non-hemolytic streptococci, which excite comparatively little tissue response and immunity reaction, would lend themselves most readily to the process of chronic infection and sensitization. They most nearly fulfill the requirements advocated by Zinsser and Wu,³⁰ who state that, ". . . it seems to us possible that the curious frequency with which non-hemolytic streptococci are associated with the disease, while at the same time the non-hemolytic streptococcus represents so many varieties, may be due to the fact that, with these organisms, that peculiar balance between invasiveness and resistance is established in man which most easily results in chronic infection."

From the experimental work of Small²⁵ and Birkhaug,²⁴ it seems unquestionable that the organisms described by them can cause the rheumatic state and the characteristic reactions in a sensitized individual. The fact that these are the only ones capable has not been proved. Whether or not a specific strain is involved has not been determined but if one accepts the allergic hypothesis it certainly becomes of less importance.

ETIOLOGY OF SUBACUTE BACTERIAL ENDOCARDITIS; PREDISPOSING FACTORS

Blumer,¹⁰ in an exhaustive study of 317 cases, found that 80 per cent of infections occurred before the age of 40, while 56 per cent of these cases occurred between 20 and 40 years of age. Debre's statistics show that 66 per cent of cases are found between 15 and 30 years, while Rosenow reported 78 per cent in the same age group.

There is a definite sex variation; Davis and Weiss²⁸ believe males to be more susceptible than females in the ratio of 3:1. Debre and others found that 60 per cent of cases occur in males, while 40 per cent occur in females.

It has been definitely shown, and repeatedly emphasized by almost all observers, that the lesions of subacute bacterial endocarditis rarely, if ever, develop primarily on a healthy valve. According to Libman,² Levine,²⁷ Boyd²⁸ and others, the pre-existing lesion in the vast majority of cases is a rheumatic endocarditis, the characteristic changes usually being demonstrable in the valve leaflet. In a small

percentage of cases, the infection is secondary to and superimposed upon congenital defects, luetic or arteriosclerotic changes. Davis and Weiss have pointed out that the degree of previous rheumatic valvular damage bears no direct relationship to the incidence of subacute bacterial infection; a mild rheumatic endocarditis is just as apt to occasion secondary infection as a marked and extensive rheumatic pancarditis.

Thus, the previous history of rheumatic fever is of utmost importance and significance. Horder obtained such a history in over 50 per cent of cases while Libman states that a definite demonstrable rheumatic infection is found in almost all cases. In general, it is possible to obtain a history of, or demonstrate previous rheumatic infection in 65 to 90 per cent of cases of subacute bacterial endocarditis.

Other associated or previous infections, exclusive of rheumatic fever, are important as a possible portal of entry or as resulting in diminished resistance to infection. Venning¹⁰ states that the primary focus is accurately demonstrable in only 27 per cent of cases, among the most important being rhinitis, tonsillitis, sinusitis, otitis media, infected teeth and pyorrhea. Babcock has stressed the importance of appendicitis and cholecystitis, while Schottmuller has isolated *Streptococcus viridans* from cases of bronchitis, pulmonary abscess, conjunctivitis, appendicitis and enteritis.

EXCITING FACTORS

According to Libman,² Blumer,² Schottmuller,¹⁰ and others, there are practically only two organisms of etiologic significance; *Streptococcus viridans* being responsible for about 95 per cent of cases, while *Bacillus influenzae* results in 5 per cent. Occasionally, there is found a case due to the gonococcus, pneumococcus, staphylococcus or other organisms but these are quite rare.

Libman has termed the organism *Streptococcus anhemolyticus* and it is probably identical with the streptopneumococcus of Rosenow which the latter has isolated from the blood of rheumatic patients. Rosenow has advanced experimental proof of the transmutability of this latter organism under variable environmental conditions, and has further pointed out that there is a marked similarity between it and

Streptococcus rheumaticus of Poynton and Paine. He offers the theory of transmutability as an explanation of their apparently different morphologic and cultural characteristics based solely on environmental factors.

Callow,⁵ in a recent study of blood cultures in rheumatic fever, found *Streptococcus viridans* in 34 per cent of cases and a pleomorphic bacillus in 51 per cent of instances. She further demonstrated the transmutability of these two organisms, confirming the previous observations of Rosenow.

It is important to note that the number of bacteria bears no constant relationship to the severity of the disease process. Experimentally, the organisms are of low virulence, although they are quite resistant to phagocytosis, and after incubation develop a resistance to the antibodies.

DISCUSSION

Most observers agree that a previous rheumatic endocarditis is the most important predisposing factor in the pathogenesis of subacute bacterial endocarditis, as previously mentioned. It should be pointed out, however, that according to Libman, only about 5 per cent of patients with rheumatic heart disease subsequently develop subacute bacterial endocarditis. These facts serve as a basis of the mechanical theory, which has been suggested by those who believe that these two clinical entities are simply different clinical manifestations of the same primary infection.

Schottmuller states that the abnormal valve acts as an anchoring ground for the secondary organisms, but fails to state the exact mechanism. Rosenow stresses the roughness and calcification of the valve leaflet while others attempt to explain it by vascular changes secondary to the previous infection. Most pathologists have agreed that the healed rheumatic valvulitis shows diminished vascularity and hence the local resistance to infection is lowered. Coombs, however, insists that the blood supply is increased and that such an explanation is untenable.

Libman,²⁹ Leary³⁵ and Von Glahn and Pappenheimer³⁵ have studied cases wherein there was a combination of the two conditions actively, that is, an active rheumatic endocarditis with a secondary subacute bacterial endocardi-

tis superimposed upon the fresh primary condition. The latter have concluded, from their study of 26 such cases, that an active fresh rheumatic endocarditis is a necessary and constant prerequisite to the implantation of bacteria or the pathogenesis of subacute bacterial endocarditis.

PATHOLOGY

It would be perhaps superfluous to enumerate in detail the characteristic pathologic findings of these two conditions; the general proliferative and inflammatory features are probably quite familiar. However, it should be pointed out that one may formulate an entirely different interpretation of these findings than the one usually suggested, with the result that striking conclusions may be drawn.

Von Glahn and Pappenheimer³⁵ have studied the hearts of 26 fatal and fulminating cases of rheumatic fever in detail. They observed that bacterial-free vegetations histologically similar to those of rheumatic endocarditis may be found: (1) on the same valve bearing bacterial vegetations, or (2) on valves bearing no bacterial vegetations, or (3) on the auricular wall. Furthermore, Aschoff nodules in the myocardium that are taken to indicate active rheumatic infection, are found with the same frequency, about 45 per cent, in cases of subacute bacterial endocarditis uncomplicated by rheumatic disease. They were able to trace a definite and unbroken transition between the bacterial-free rheumatic verrucae and the larger thrombotic vegetations, in which bacteria had elicited a violent cellular response with destruction of the valve substance.

Clawson and Bell³³ have intensively studied the hearts of 220 cases of bacterial endocarditis. They state that in both conditions, rheumatic and subacute bacterial endocarditis, the essential lesion is a proliferative inflammation of the valve; the thrombus over the infected area is larger and softer in the subacute lesions, and the difference is one of the intensity of the reaction only. The Aschoff nodule is found in 98 per cent of active and fatal rheumatic lesions, and in about 45 per cent of cases of subacute bacterial endocarditis. However, in a healed rheumatic lesion, only 8.5 per cent of the cases show typical nodules.

It should be emphasized that the location of

the endocardial lesions is very similar, if not identical in both conditions; the order of frequency of the valves involved is: (1) mitral; (2) mitral and aortic; (3) aortic in both instances, with but slight differences in the percentage incidence which is of no great import.

CLINICAL SYMPTOMATOLOGY

No attempt will be made to discuss the various clinical manifestations of these two conditions in detail. There are certain features, however, pointed out by Libman, Clawson, Rosenow and others, which deserve particular mention.

Torrey² has emphasized the variability of other streptococcal infections, especially erysipelas, scarlet fever and subacute bacterial endocarditis. In scarlet fever, for example, one notices a great variation in different epidemics in the symptoms, course, severity and the incidence of complications. These variations are largely dependent upon: (1) virulence of the organisms; (2) mode of infection; (3) number of invading organisms and (4) the resistance of the host to infection. However, there is one well marked feature which may be accepted as typical of any attack, namely, the conferring of a long lasting immunity. By contrast, immunity following erysipelas is characteristically brief.

Streptococcus viridans infections of subacute bacterial endocarditis are variable in their tendency to become chronic, but similar in their lack of producing an immunity in the host adequate to eradicate the infection or terminate the disease.

Hemolytic streptococcal infections, namely septic pneumonia or septicemia, can and do produce a high degree of immunity in the host, resulting in complete eradication of the disease process. In this respect, although the prognosis is grave in either, the outlook for complete recovery in hemolytic streptococcal septicemia is better than when one finds a septicemia due to the mildly reacting *Streptococcus viridans*.

Admitting the possibility that rheumatic fever and subacute bacterial endocarditis are the same disease, the theory of latency of infection assumes a greater importance. This constitutes a reasonable explanation and there is analogous proof of this possibility when one con-

siders the pathogenesis of tuberculosis, syphilis and pyogenic infections. The most obvious criticism of the theory is the fact that only 5 per cent of patients who suffer a primary rheumatic attack subsequently develop subacute bacterial endocarditis. This criticism is probably more apparent than real when one remembers that of all the primary lesions of syphilis, only 10 per cent result in clinical neurosyphilis; this has been attributed by some to a particular neurotropic strain of the spirochete but this hypothesis has not been universally accepted.

Libman has recently pointed out that the prognosis of subacute bacterial endocarditis may not be quite as grave as is generally supposed. He is of the opinion that there are many instances of mild, subclinical degrees of infection, wherein the diagnosis is usually missed and the patient proceeds on to complete recovery.

Further, if the transmutability of organisms, as experimentally shown by Rosenow and confirmed by Callow, does occur in vivo, an adequate explanation is offered.

Steinert, Coombs, and Rosenow have suggested that alterations of the immunity state in the host explains the variable clinical manifestations, still assuming that the two conditions are one and the same. The latter has shown that the serum of experimental animals who have recovered from infection with the streptococcus has little lytic or destructive power against the organisms. This is due in part to the fact that the organisms can develop resistance to the antibodies, as demonstrated by Rosenow.

In classical examples of rheumatic fever and subacute bacterial endocarditis, the clinical picture in each is outstanding and easily recognizable; they are to all intents and purposes, separate and distinct clinical entities. However, as Von Glahn and Pappenheimer have pointed out, in many cases the differentiation is extremely difficult and not infrequently impossible. Particularly is this true in those cases of fulminating, uncomplicated rheumatic endocarditis, and in those instances in which a bacterial endocarditis is superimposed upon an active rheumatic lesion.

CLINICAL COURSE

In either of the above instances, the clinical

course is progressively downward with a fatal termination almost invariably occurring from six months to two years after the onset of the primary rheumatic attack. At the onset, the patient apparently presents all of the classical signs and symptoms of a primary attack of rheumatic fever, namely, preceding upper respiratory infection followed by a latent period of 10 to 21 days, with an acute onset of marked constitutional symptoms, arthritis and endocarditis, all of which are supposedly pathognomonic. It is important to note, that at this stage, 80 to 90 per cent of patients will give a positive skin reaction to streptococcal filtrates, and over 50 per cent will have a positive blood culture for *Streptococcus viridans*.

There may or may not follow periods of partial or complete remission of symptoms, alternating with recrudescences. However, within a comparatively short period of time, the patient develops the classical signs and symptoms reputedly pathognomonic of subacute bacterial endocarditis, namely, profound anemia, positive blood culture for *Streptococcus viridans*, and embolic phenomena. As has been shown by Clawson and Bell, patients who present the clinical signs and symptoms of fulminating and uncomplicated rheumatic fever frequently show a profound anemia, a positive blood culture and embolic phenomena, particularly after the onset of auricular fibrillation. From these observations, they conclude that these points cannot serve as differentiating factors.

AUTOPSY FINDINGS

At autopsy, characteristic bacteria-free rheumatic vegetations may be, and are usually found adjacent to the large thrombotic and infected vegetations of subacute bacterial endocarditis. In view of the conclusions of Von Glahn et al, that one can trace a definite histologic transition from the bacteria-free rheumatic verrucae to the infected vegetations of subacute bacterial endocarditis, several interesting questions immediately present themselves.

In the first place, was this case an instance of a primary rheumatic endocarditis complicated by a secondary superimposed bacterial endocarditis? If so, when did the secondary infection occur and in what way could it be demonstrated clinically?

The other possibility is that this clinical picture was one of a primary fulminating infection, presumably of streptococcal origin, which terminated fatally due to the virulence of the invading organisms or as a result of the lack of resistance to infection on the part of the host, or due to a combination of both of these factors.

Thus, Clawson and Bell, in a comparison of rheumatic fever and subacute bacterial endocarditis, have stated, ". . . from a large number of cases, we get the impression that these two forms of endocarditis represent mild and severe degrees of the same infection . . . histologic studies of the valve leaflets indicated that the two forms of endocarditis differed only in the intensity of the proliferative-inflammatory process; in both types, the essential lesion is a proliferative and inflammatory endocarditis, but the thrombus over the infected area is larger and softer in the subacute lesion . . . unless the improbable assumption is made, that 75 per cent of cases of subacute bacterial endocarditis have a simultaneous rheumatic infection, it must be granted that rheumatic fever and subacute bacterial endocarditis are caused by the same organism, the streptococcus, generally the viridans strain."

SUMMARY

The etiology of rheumatic fever is unknown. The most prevalent belief at present is that the rheumatic state is the reaction or response of the individual, previously sensitized, to the further absorption of toxic products of streptococcal infection. Whether or not a specific strain is responsible has not been unequivocally determined.

The etiology of subacute bacterial endocarditis is *Streptococcus viridans* in about 95 per cent of cases; the *Bacillus influenzae* results in about 5 per cent. Primary infection of the endocardium rarely, if ever occurs; the previous endocardial damage, in the vast majority of cases, is rheumatic in origin. A previous history of rheumatic history is obtained in 65 to 90 per cent of the cases of subacute bacterial endocarditis.

The possible etiologic relationship of the two conditions was considered in view of experimental, bacteriologic and immunologic and pathologic investigations.

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CESAREAN SECTION*

A SYMPOSIUM

LOW CERVICAL CESAREAN SECTION

JOHN F. DICKS, M. D.

NEW ORLEANS

Infection following the opening of the peritoneal cavity constitutes the greatest danger of the classical cesarean section. The old accoucheurs sought to avoid this by delivery of the child through a flank incision, gaining access to the cervix without incising the peritoneum. Owing to imperfect technic and more imperfect asepsis, their patients died and their op-

erations were forgotten. It was left to Frank in 1906 to bring to life the old idea and since then many lower segment operations have been devised. In some, the peritoneum is not opened at all, but is peeled up off the lower uterine segment after displacing the bladder to one side and then delivery is effected. In others the peritoneal cavity is opened above the pubis, the bladder dissected down and the visceral peritoneum of the uterus dissected up. This operation has been perfected by DeLee and the latter improved by Beck. I am sure you are all familiar with this technic, but there are many pitfalls and I feel it will be of interest to go into details.

First, let us consider the advantages of the low section over the high or classical section. The indications for the classical section are limited to what we call the section of election. In other words, we do not attempt to do the old or high type operation after labor has definitely set in or where there have been frequent vaginal examinations, or the membrane has ruptured. On the other hand, the low section may be done many hours after the onset of labor.

TECHNIC OF OPERATION

I will attempt to outline the technic of the lower segment operation with particular reference to points which seem to play an important part in its ease of performance.

The patient is placed in the horizontal position. I feel that this position has some advantages over the Trendelenburg because in the Trendelenburg there is a tendency to embarrass the diaphragm because of the proximity of the fundus to the uterus. Further, when operating with the patient in the Trendelenburg position, one is faced with the effort of extracting the presenting head against the weight of the child itself, and if fundal pressure is used at this stage, it has to be exerted up hill, as it were. Great force is necessary to produce the same effect as gentle pressure exerted in the horizontal position. The patient should be catheterized; an empty bladder is of prime importance in this type of operation.

The abdomen is opened in the midline below the umbilicus. The end piece of a Balfour retractor is placed in the lower end of the wound. No packs or other retractors are necessary. A semicircular incision is made through the peri-

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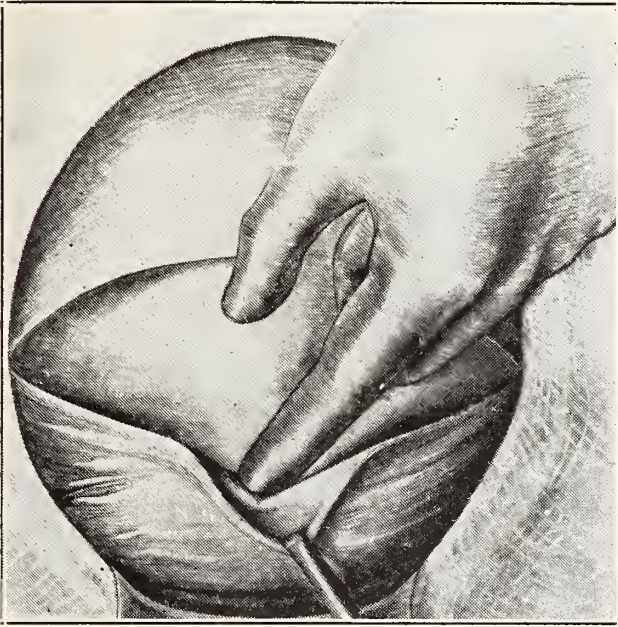


Fig. 1. Preliminary steps in low cesarean section.

toneum about an inch above the bladder attachment. The bladder is pushed well down. The visceral peritoneum of the uterus dissected well up towards the fundus, and the muscles of the lower uterine segment are exposed.

Several types of incisions in the muscle have been suggested: transverse, semicircular and vertical. I have found the vertical incision the safest. The transverse in my opinion is dangerous because it is likely to split during the

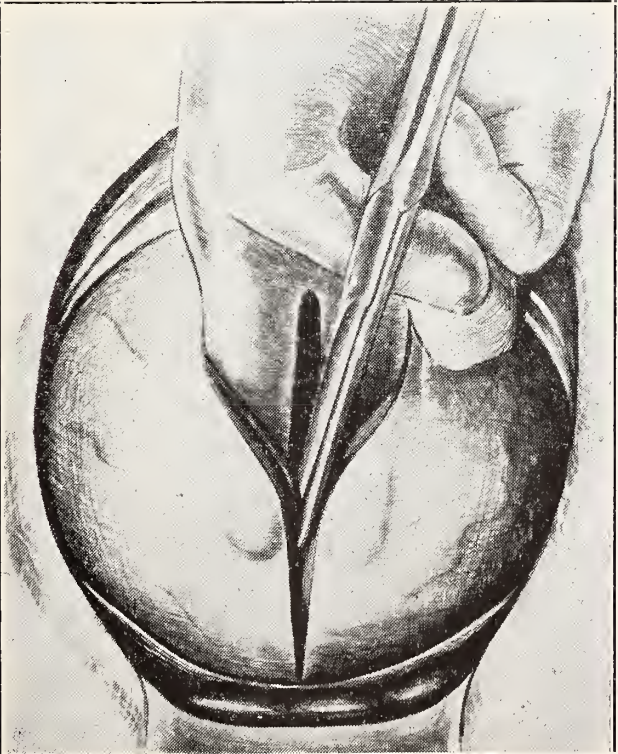


Fig. 2. Division of the muscles with scissors.

delivery of the child's head, with probable serious hemorrhage from tearing of the uterine vessels.

The muscles are divided with scissors or scalpel. Up to this stage unless one has encountered the placenta, the operation presents little difficulty.

The next problem is the extraction of the presenting head. Here again is a difference of opinion. It may be done by the application of forceps or by the use of one blade of the forceps introduced behind the head and used as an elevator. Bimanual extraction of the head

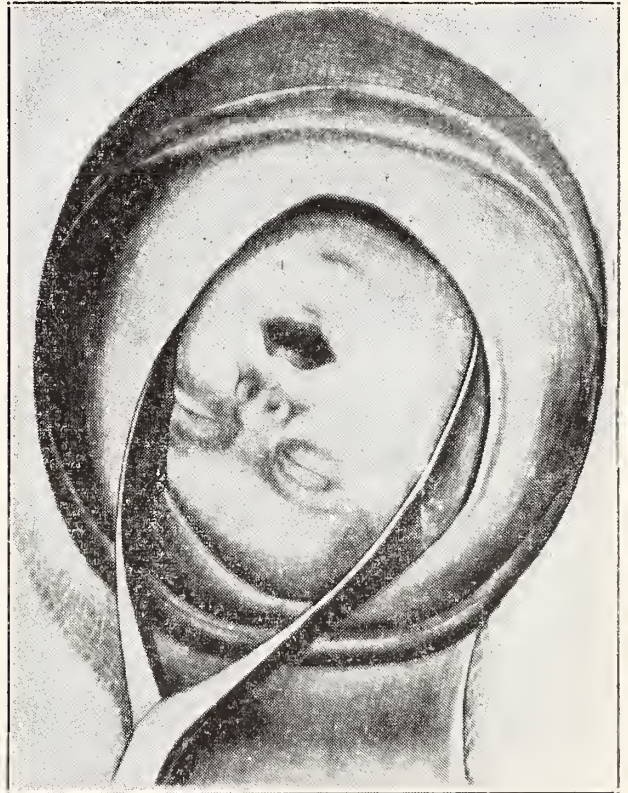


Fig. 3. Extraction of presenting head with both blades of the forceps.

can be effected in the following manner: The operator's hand which is at the lower level relative to the long axis of the patient is introduced through the incision and passed round the vault of the child's head to the posterior aspect. The fingers of the upper hand retract the upper flap of the uterine incision and in conjunction with firm, uniform fundal pressure by an assistant, the presenting head is shelled through the incision and the child's body delivered thereafter.

I consider the use of both blades not always a safe procedure, since in extracting a child's head through a limited incision in soft tissues

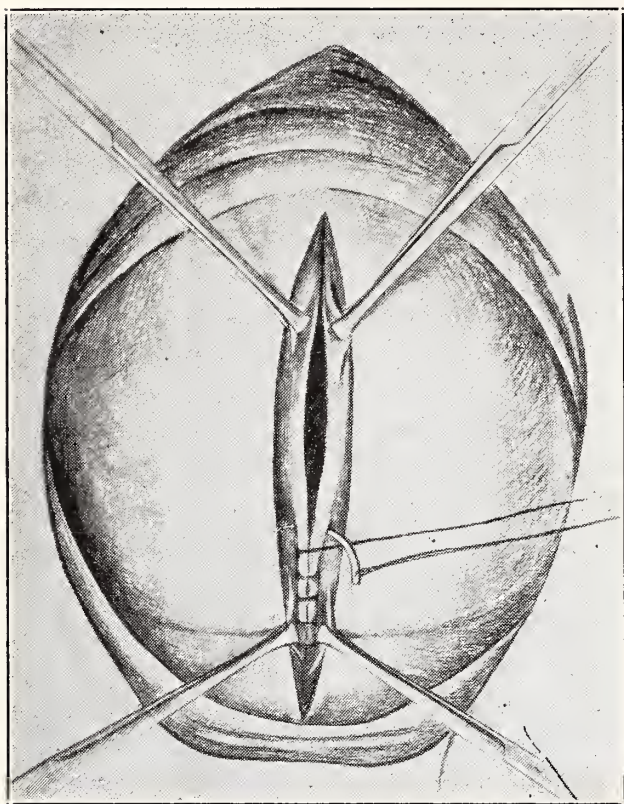


Fig. 4. First suture with chromic catgut.

it becomes difficult to gauge the strain and deep tears may result.

EXPRESSION OF THE PLACENTA

The uterus at this stage is not lifted out of the abdomen. Nor is contraction of the uterus assisted in any mechanical way. One c.c. of pituitrin is now given and we wait until the uterus begins to contract. A clamp is placed on the cord about two inches from placenta and the placenta gently lifted from side to side. The action of the pituitrin quickly frees the placenta. The hand is never introduced into the uterus. Various discussions have arisen about the technic of uterine suture. Some writers tell us not to include the endometrium in the first layer of sutures for fear of endometrial grafts or transplants. I recommend using No. 1 chromic catgut continuous suture including muscle and endometrium. (I say this on account of hemorrhage). Interrupted chromic sutures reinforce the muscle suture. The upper flap of the peritoneum is then brought down and fastened to the uterus by several catgut sutures. Following this the lower flap is brought up to overlap the upper and is fastened by a continuous suture. The abdominal wall is closed without drainage.

With the low cervical operation at our command, we are able to perform cesarean sections with an extremely high degree of safety even in infected or potentially infected cases. We are able to give a satisfactory test labor without burning our bridges behind us. In fact a low cervical section is easier to do from an operative standpoint after a patient has been in labor for many hours because the lower segment thins out and the peritoneum is easier to dissect. The mechanical difficulties one encounters are the delivery of the head through so limited a space, and the dangers of a deep tear involving the uterine vessels. I do not advocate this type operation to a man doing occasional surgery, but in the hands of an ordinarily trained man who uses a reasonable amount of care and gentleness, the operation is not only safe and sane, but it may be the means of saving many a valuable life.

SUMMARY

I, therefore, am glad to outline the technic of low cervical section to you tonight not only as a distinct boon to suffering womanhood, but as a further means of elevating our specialty to the high plane it so justly deserves.

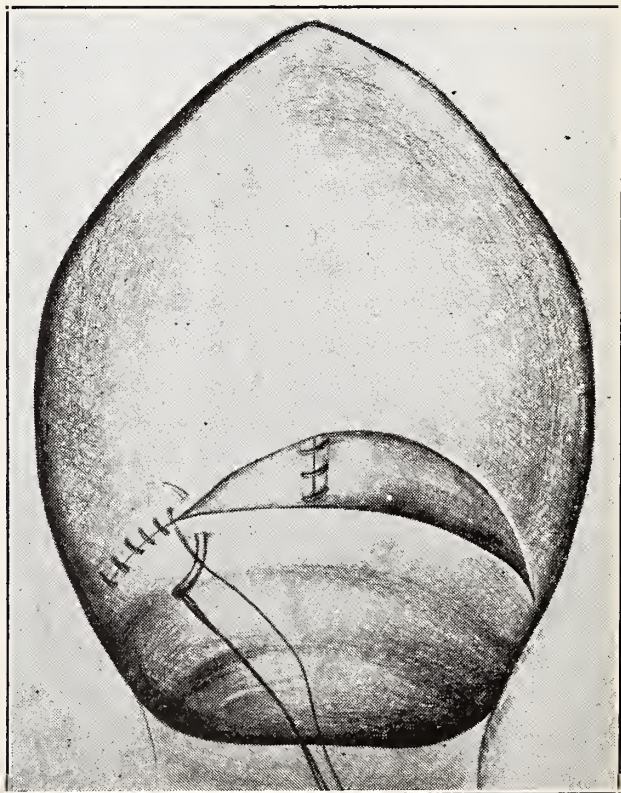


Fig. 5. Closing of the upper and lower flap with continuous suture.

CLASSICAL CESAREAN SECTION

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The classical cesarean section, or so-called corporeal hysterotomy, was revolutionized in 1882 when Max Sanger wrote his treatise on the closure of the uterine incision. Prior to and during the early part of his life the uterine wound was left unsutured, or to the providence of nature, by contraction of the cut edges of the incision and even to the use of rubber ligatures and sutures, silk, linen and hemp.

Sanger spoke of conservatism in performing the classical section; the proper placing and suturing of the uterine wound; and a definite time for its performance. The writings of Radford of Manchester, England, in 1865 remind us of the better results obtained when the case is elective; before the advent of labor; or early in labor with unruptured membranes without vaginal examination; with the operation a procedure of choice rather than one of necessity, on account of delay.

Due to the activity of the uterine muscle during the labor it was held in the 19th century that hemorrhage could be minimized if the operation was performed at the end of the first stage of labor. Such an operation today would hardly be wisely met with in a classical cesarean, but would be performed by a technic for potentially infected cases.

For the classical cesarean to meet with the greatest success it must be done as an elective procedure, before or early in labor before dilatation has attained appreciable advance, and before rupture of the membranes occurs with preferably no vaginal examination 48 hours preceding the operation.

No wonder that the revolutionizing of the classical cesarean by Sanger was one of the greatest achievements in operative surgery, when we come to think that during the greater part of the 19th century the most fatal of all surgical operations was the cesarean section, and quoting from Eastman he says, "In Great Britain and Ireland the maternal mortality from the operation had mounted in 1865 to 85 per cent. In Paris, during the 90 years end-

ing in 1876 not a single successful cesarean section had been performed."

Andre Levret, in 1770, taught that uterine sutures were useless on account of the prodigious contractions which the uterine muscles underwent during contraction, and it is with this thought in mind that we today alter the technic of uterine closure by using catgut—interrupted, continuously or mixed—according to the view of the individual operator.

No matter what technic is used in performing the various types of cesarean sections, there will always be a certain number of ruptures in subsequent pregnancies. The diseases of early childhood such as scarlet fever, pneumonia, whooping cough and diphtheria, as well as diseases of the adult, such as the acute infections, all play their role in leaving earmarks in every organ of the human body. Why then should the uterus escape? It is for this reason that the giving way in a subsequent cesarean of a uterine scar, thought to be impervious to rupture, often occurs in our most carefully handled cases.

There is no standard for the classical cesarean section of today. The technic for opening the abdomen and the uterus as well as the closure thereof varies with each individual operator. Sanger used silver wire in producing a closer approximation of the uterine incision, but the conception and development of the silver wire suture was an American achievement and was practised between 1867-1880.

The classical cesarean section involves the opening of the abdomen and an incision into the uterus, either in the fundus or its body without detaching the bladder from its normal position, or walling off the general peritoneal cavity. The methods of Sanger, Leavitt, DeLee, Irving, Schumann, Bland, Davis and others all vary their technic in regard to the skin incision, as well as the uterine incision, and its closure for this operation.

The several incisions that are used at the present day may be one entirely above the umbilicus; entirely below the umbilicus, or medially to either side of the umbilicus, the incision extending both above and below this structure. The late Asa B. Davis devised and popularized the high incision which is made entirely above the umbilicus and when performed is usually

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called the high classical cesarean. In his operation the incision into the uterus is made high in the fundus, distinguishing it from the other types of operations in which the incision is made in the body of the uterus, or the lower uterine segment. The manner of suturing the uterine wound of today varies with different operators. One operator will suture the endometrium with chromic catgut in a continuous suture, followed by one or two layers of continuous suture in the uterine muscle, with closure of the serous covering by a continuous plain 0 suture after Lembert. Another operator puts no suture in the endometrium but uses a continuous catgut suture in the muscle and covers the serous surface with a Lembert suture of plain 0 or No. 1 catgut.

Another operator uses interrupted sutures of chromic No. 2 catgut which takes in the serous and muscular coats of the uterus and then places a continuous suture in the muscle of the uterus before tying the interrupted ones.

There are again preoperative methods that are used by various operators before opening the abdominal cavity, such as the administration of pituitrin hypodermically just previous to the section, followed by a similar dose or some form of ergot, after the extraction of the placenta.

TECHNIC OF HIGH CLASSICAL CESAREAN SECTION

The technic upon which I wish to speak tonight is the one used by the late Asa B. Davis of New York, known as the high classical cesarean section, and is as follows: The patient to be operated upon is one of election in whom labor has not commenced, membranes intact, no vaginal examination for 48 hours, and with a definite indication for its performance. The patient receives no medication before the morning of the operation; the diet six hour previous to operation being liquid. One hour before operation the patient is given 1/150 gr. of atropine, but no narcotic is give on any condition at any time previous to the operation on account of the effect upon the child. One hour before operation the patient is given a low enema. General anesthesia is used. The patient's abdomen is prepared by the ordinary procedure for an abdominal operation. An incision is made in the abdomen entirely above the umbilicus; the lowest point of incision be-

ing about one-quarter inch from the umbilicus. The length of the incision will vary from two and one-half to three inches in length depending upon the weight of the patient and the thickness of the abdominal wall. Upon opening of the abdomen, the uterus will immediately be exposed and in close proximity to the incision. This incision is fully large enough for the whole hand to be introduced into the abdominal cavity in case the uterus should have a slight obliquity. A piece of sterile gauze, one yard wide and one yard long, is placed in the upper angle of the wound to secure the intestine in place. Right angle retractors are then put into each angle of the wound and held by an assistant, while another assistant places a hand on either side of the abdomen below the umbilicus and steadies the uterus in the median line. This assistant should not loosen his hold until the placenta has been extracted and the uterus brought up and the incision in the uterus exposed to the incision in the abdominal wall. The abdominal incision is very flexible, so it is easy to judge the diameter needed for the extraction of the fetal head. An incision is now made into the fundus of the uterus three inches long unless the operator feels that the head may be a little larger and in such case the length of the incision should compare to the approximate size of the head. Thick uterine muscles require longer incision than thin muscles. The first incision into the uterine muscles is then followed by similar incisions until the membranes appear, at which time the index finger of each hand is placed at the end of the incision, so as to make a patulous opening. The hand is then introduced into the uterine cavity so as to glide between the membranes and the uterine wall. The membranes are then separated from their attachment to the uterus. The membranes are then ruptured and either one or both feet of the baby are seized. The baby is then delivered as far as the shoulders, at which time the arms are then delivered by placing the finger in the elbow of each arm. The head is then delivered by the Mauriceau-Smellie-Veit method. Immediately after extraction of the baby one c.c. of pituitrin is given into the muscle of the uterus, which may be repeated at any time during the operation if necessary. The placenta is then manually extracted, the cavity

wiped out, and the sutures placed. The closure of the uterine wound is now performed by the use of interrupted chromic catgut No. 2. These sutures are placed one-eighth of an inch apart and each one takes in the serous, muscular and mucous coat of the uterus. The sutures are tied and the knots cut short. This line of incision is now covered over by a Lembert stitch through the peritoneum of the uterus with a plain No. 0 catgut. The patient is then given a quarter of morphine or it could be given just after the delivery of the baby. The abdominal wound is now closed in layers using plain No. 1 catgut for the peritoneum, No. 2 chromic catgut for the fascia and using three silkworm sutures for the skin with a like number of plain No. 0 interrupted catgut for further closure.

(This technic was demonstrated by a moving picture.)

THE PRE- AND POSTOPERATIVE CARE AND COMPLICATIONS OF CESAREAN SECTION

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Preoperative care begins when it is realized that the patient is either potentially or definitely a candidate for cesarean section. The earlier the need for a section is determined, the better the prognosis for the patient. Patients seen early in pregnancy require more than the usual antenatal care and direction, in that they should be emphatically advised that rigid adherence to the rule: "No douches, no tub baths, no intercourse, during the last two months of your pregnancy," is essential. I have seen a patient with an absolutely contracted pelvis die as the result of a streptococcal infection arising in the cervix, upon whom no vaginal examination was performed after the fourth month of pregnancy, in whom labor had not yet begun at the time of section, and in whom no evidence could be found at autopsy to indicate that the infection was the result of the operation. But this patient had had intercourse regularly until the day before the operation. That this was the most probable causal agent for the introduction of the organisms cannot be denied.

Should the patient complain of profuse, ir-

ritating discharge, douches are allowed under careful supervision, but only with sterile nozzles, tubing and bag; the water used in the douche should also be sterilized. Should the discharge be the result of a trichomonas or yeast infection, the infection should be actively combatted by the physician and not by the patient.

Candidates for cesarean section should have frequent hemoglobin and blood count determinations, and any tendency to anemia should be counteracted by hemopoetic stimulants and/or blood transfusion, as anemic patients make poor operative risks. Should a patient give a history of bruising easily or bleeding for a prolonged period following trauma or tooth extraction, even though the coagulation and bleeding times are within normal range, it is best that calcium and viosterol (30 drops three times daily) be given during the last month of pregnancy. Definite evidence that the latter therapeutic measure aids considerably in lessening coagulation and bleeding time has been produced by Shapiro, Melnick, McNealy and Ivy.

Any vaginal examination made should be performed with the utmost care and in the most aseptic manner. An ounce or two of mercurochrome instilled into the vagina, especially in patients who have had a prolonged labor, can do no harm and might help in the prevention of a postpartal sepsis.

Routinely, before operation, I advise a warm soap suds enema, and needless to say, the abdomen is shaved and the patient catheterized. Atropine sulphate, gr. 1/150, is given but not morphine, as the latter given close to the time of delivery is definitely a cause of fetal asphyxia. If the patient has eaten or partaken of much liquid within six hours of the time of operation, the stomach is emptied by gastric lavage. It is well to give an infusion of 10 per cent glucose, 1000 c.c. preoperatively to patients who have had a long, exhaustive labor prior to section. And we will continue to see these patients as long as "test of labor" is synonymous with "ad infinitum." One c.c. of pituitrin given intramuscularly at the time the abdominal incision is made, or 1 c.c. given into the uterine muscle just before incising the uterus, aids materially in lessening the blood loss from the uterine wound. I do not advo-

cate its use in breech presentation, however, as there is danger that this might impede delivery of the after-coming head through the incision.

POSTOPERATIVE TREATMENT

Postoperative treatment consists of morphine sulphate, gr. 1/6 or 1/4, as needed. For the first twenty-four hours, liquids should be given sparingly, as cesarean section patients, due to the sudden decompression of the abdomen, frequently develop acute gastric dilatation, and early imbibition of fluids only serves to aggravate the condition. Should fluids be needed, they are best given by infusion, usually 2000 c.c. of 5 per cent glucose in 1 per cent saline, during the first twenty-four hours. In the second twenty-four hours, fluids are given by mouth, providing there is no nausea, vomiting, nor evidence of distention. Rectal tube and stupes during this period aid materially in making the patient more comfortable. On the morning of the third day, an enema is given and if there is no distention, nausea, or vomiting, the patient is allowed a soft diet. Following this, laxatives and an increase in diet are given as needed. The bladder is catheterized every eight or ten hours until the patient can void spontaneously.

Time does not permit a free discussion of all the complications that might follow cesarean section. Suffice it to say that massive collapse of the lung, pneumonia, abdominal wall infection, cystitis, all follow cesarean section with the same relative frequency as other pelvic operations. There are a few complications, however, that do occur which warrant particular attention, namely, acute gastric dilatation, ileus, peritonitis, parametritis, and thrombophlebitis. Acute gastric dilatation, ileus, and peritonitis, are treated by using the Wangenstein suction until the abdomen is soft and flat. During the period of its use, the fluid balance is maintained and electrolytes supplied by infusions (3000 c.c. daily) of 5 per cent glucose in 1 per cent saline, or two ampoules Hartmann's solution to each 1000 c.c. glucose. A rectal tube is inserted and either a heat tent or repeated stupes are used to supply heat to the abdominal wall. Morphine gr. 1/6 to 1/4 is given every four to six hours, providing the patient's respirations are not depressed. After

signs of distention, nausea and vomiting cease, the regular postoperative regime is instituted.

In parametritis, a high caloric diet and repeated small whole blood transfusions are used. Should, as is not infrequently the case, ileus complicate the picture further, it is combatted as above. Sulphanilamide may prove of help in these cases, and in dosage of 10 grains, four or five times daily for a few days, should not produce any ill effect, if given only to patients who have not shown any evidence of toxemia prior to cesarean section or kidney damage following cesarean section.

Thrombophlebitis of the femoral vein is treated with rest of the affected part, heat, and early application of leeches, which latter measure considerably shortens the period of convalescence.

If we are to reduce the mortality and morbidity resulting from cesarean section we first have to reduce the number of patients who are allowed to undergo a prolonged labor before section is performed, and second, we must make the case the best possible surgical risk by adequate antenatal care, advice and therapeutics.

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CESAREAN SECTION A SUMMARY

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If my remarks seem to be more of a repetition than a summary of the points already brought out, my alibi is that I found my psychic powers inadequate to foretell the gist of papers I had been given no opportunity of reviewing.

Meetings such as the present one are a positive influence in stimulating an understanding by obstetricians and general practitioners of the absolute and relative indications for cesarean section; also, in teaching them the necessity of making definite estimates of the important obstetrical diameters of the mother's pelvis, and, when there is question of disproportion, to refer the patient earlier to the hospital and to the

trained man. Many of the cases which we formerly saw late with definite contraindications for cesarean section are now seen earlier and are receiving proper attention under safer conditions. Evidence of this is the reduction of mortality in cesarean section for New Orleans during the last ten years from 16.1 per cent to 5.9 per cent. A mortality rate of 5.9 per cent is still entirely too high and compares very unfavorably with figures from other cities of similar size. It is hoped that the trained obstetrician will persist in the campaign of education and that the general practitioner can be furnished sufficient information to enable him to diagnose complications and to determine indications for cesarean section more definitely than is being done today. Although consultations are being requested more often than formerly, they are not being requested as often as they should be. The high incidence of unfortunate end-results points to the need of more frequent consultations. In the face of disaster, the general practitioner seems to find it all too easy to explain satisfactorily to the family the death of a fetus and the serious obstetrical injuries of a young mother. Existence of such a situation is possible in most instances only because of misplaced confidence.

DEVELOPMENT

It took centuries for cesarean section to emerge from a destructive procedure of last resort in the presence of death to its present development as an elective obstetrical measure. Although a glance over the facts and figures in the current literature might suggest that there is a suspicion in the minds of some obstetricians that cesarean section is still being used solely as an emergency operation. The first authentic record of a true cesarean section is that of Trautman of Wittenberg, in 1610, upon a woman with hernia of the gravid uterus. Until 1882, when Sanger introduced the conservative section, no sutures were placed in the uterus and the mortality from hemorrhage and sepsis was high. Based on Felkin's report of the cesarean section he witnessed in Uganda in 1879, there is, of course, a possibility that suture of the uterus was practiced before Sanger's time.

The development of cesarean section has been similar to that of all major surgical procedures. With increased understanding of infection and

possible complications, a technic has been evolved which is safe, if all the indications for its performance are rigidly met, and therefore, a greater number of surgeons are using cesarean section. It is my personal opinion that the indications for cesarean section are much more elastic than formerly, and rightly so. I believe if conditions exist that even partially indicate the necessity of cesarean section, and if these conditions are recognized early, cesarean section offers the safest manner of delivery. I cannot derive a great amount of consolation from having forcibly delivered a baby through even a slightly contracted canal when the procedure results in extensive injuries to the cervix, to the urogenital and rectovaginal fascia, and to the perineum. These injuries necessarily increase the morbidity, add to the risk of hemorrhage and sepsis, and condemn the patient thus damaged to ill-health until an extensive plastic operation can be done to restore her to anatomic fitness. Nor has it been my experience that trial labor, prior to cesarean section, offers any advantage. It gives very little definite information and undoubtedly adds to the hazards of the operation. Nor am I convinced that serial roentgen ray views taken at intervals throughout the trial labor give any more information than can be obtained by examinations. My practice is to examine frequently those patients in whom a degree of pelvic contracture would indicate difficulty might arise, and, if at term, the head is not engaged in the true brim, a definite date for elective section is set.

Edward Reynolds, in 1907, was the first in this country to call attention to the abuse of cesarean section, and his views, even with the passing of thirty years, are still excellent obstetrical judgment. He decried the practice of hesitancy in choice of a method of delivery: "If the date of election is the safest time for the performance of the section in cases of absolute indication, it is of necessity also the safest time for the section when done for a relative indication." Reynolds pointed out that the "bad practice of performance of the section after a variable amount of labor is founded on a general, but mistaken belief, that the so-called test in labor is our only sure method of determining the question in those cases in which the section

is indicated in the absence of extreme deformities of the pelvis Though the test in labor is certainly the easiest of all methods of determination of the degree of mechanical adaptation present, its value may well be doubted when considered in connection with its dangers The means of diagnosis placed at our command by recent progress are sufficient to enable us to decide in the great majority of all cases with a fair degree of certainty, for or against that which is the ideal operation in all really difficult cases, the primary cesarean section." There could be no doubt of the accuracy of the test in labor persisted in to the point of actual failure of the natural forces, but unfortunately, the danger of the performance of section so late in labor is also undoubted. On the other hand, the partial test of labor he held to be of slight value: "Little can be judged by the character of the first pains, and with each successive hour the danger of the subsequent section increases *pari passu* with the increasing value of the test." Reynolds believed that the gradual elimination of the doubtful class could be attained, "first, by better methods of estimation of the amount of mechanical obstruction presented by a given case; and second, by the estimation of the value of that obstacle when considered in connection with the information as to the probable character of labor obtained by history and a diagnosis of the constitutional and muscular condition of the patient." If analysis of the mechanical obstruction leaves the choice of method in doubt, primiparae and multiparae should be considered separately. "Doubtful cases must be treated by individual judgment, but the important point is that in multiparae with mechanical obstacles it is not the number of centimeters in the conjugate, but the history of previous labors which should be the paramount point in determining the indication. Common sense should never be forgotten in our practice." In primiparae, the age and constitutional characteristics are to be carefully considered: "Strong young women in whom the degree of mechanical obstacle is doubtful may be left to the full test of natural labor in the hope that the head may be driven past the brim and with an abiding faith that if this fails this class of women will endure the intrapelvic operation well and safely." The management of subsequent labors

may then be determined by the experience gained in the first. In elderly primiparae, when there is any doubt after study of the mechanical obstacle, cesarean section will usually be the safer operation. Reynolds calls attention to the necessity of always bearing in mind that "Labor is a muscular function and its efficient performance is dependent on the possession of muscular power in combination with a capacity for enduring pain without undue exhaustion, and physiologic research tells us that muscular endurance, muscular coordination and nervous stamina are usually dependent on the possession of good eliminative organs and heart muscle. This combination is often found in otherwise very delicate individuals Whenever, on the other hand, in elderly primiparae, or in younger women with exceptionally rigid soft parts, the choice, from a mechanical standpoint is an essentially doubtful one, the balance of advantage lies with the primary section; and the same may be said of the 'obstetrically worst equipped' who deteriorate during pregnancy."

INDICATIONS

There is only one absolute indication for cesarean section which admits of no quibbling. If the true conjugate measures 6 to 6½ cm. vaginal delivery of a full sized child is impossible. Even with a conjugata vera of 9½ cm. we must remember the possibility of the existence of funnel pelvis and consider the size of the outlet. I agree with Newell that many obstetricians rely too much on external pelvimetry alone for classification when as a matter of fact external pelvimetry tells us but little. Internal pelvimetry is fairly accurate; the diameters of the pelvis can at least be estimated and it is the only way we can tell if the pelvis is contracted.

The relative indications for cesarean section have already been covered in detail and there is no need for me to enumerate them.

There is no doubt but that in certain pre-eclamptic toxemias cesarean section should be the operation of choice, particularly if the patient is a primipara, if the toxemia is progressive, if the cervix is long and rigid, and if the position of the baby will not insure a simple uncomplicated induction of labor. I cannot subscribe to the use of cesarean section in any true eclamptic state. Certainly, under such condi-

tions, the induction of labor by one of the many methods, along with the proper narcosis, is the procedure to elect. I believe this opinion is concurred in by most authorities today. Eardley Holland cites the analysis by T. Watts Eden of the recent collective investigation of eclampsia in Great Britain, which showed that patients with eclampsia delivered by cesarean section had a mortality much greater than the average for the disease, both in mild and in severe cases. Holland also points out that cesarean section for pelvic contraction on otherwise healthy young women without complications and not in labor shows a mortality of from one per cent to two per cent, whereas, natural delivery in young women comparable in all respects except absence of pelvic contraction, shows a mortality of from one to two per 1000, and that, therefore, it would seem cesarean section as a method of childbirth is only one-tenth as safe as normal labor.

All patients with placenta previa centralis should be delivered by cesarean section because of the impossibility of lessening the hemorrhage, coincidental shock and infection which accompany any type of delivery by the normal route. In certain instances, patients with placenta previa marginalis should receive serious consideration as candidates for cesarean section. In this group, I would place primiparae with a cervix which has not been partially obliterated, when little dilatation has occurred and the introduction of bags would cause trauma and increase the likelihood of hemorrhage. The use of a pack is unsatisfactory, and apt not only to fail in inducing uterine contractions, but by being left in for a long period of time, to tend definitely to increase the possibility of sepsis.

Cesarean section is absolutely indicated in abruptio placentae, except in very mild cases when the patient is in active labor.

I do not believe that abnormal presentation alone offers a sufficient indication for cesarean section, and have never performed it merely for this reason. However, when abnormal presentation is complicated with a large child, contracted pelvis, rigid soft parts, or when this accident of pregnancy occurs in an aged primipara, I believe that cesarean section is to be seriously considered.

CONTRAINDICATIONS

Chief among the contraindications for cesarean section are the presence of a dead baby or a long labor with multiple vaginal examinations. Of course, in cases with frank infection neither the classical nor the low cervical section should be attempted, but a Porro, or Gottschalk-Portes, or Latzko procedure.

Munro Kerr and Eardley Holland in 1921 published an analysis of 4,197 classical sections performed in the hospitals of Great Britain and Ireland during the period 1911-1920, inclusive. The maternal mortality for patients not in labor, or very early in labor, was 1.6 per cent; for patients after attempted surgical induction of labor, 14 per cent; and after "failed forceps", the mortality reached the high figure of 26 per cent. The conclusion was that the maternal mortality of cesarean section is almost entirely due to septic infection, leading as a rule to general peritonitis; also, that a few deaths were accounted for by pneumonia (probably of septic origin), pulmonary embolism, postpartum hemorrhage, and postoperative intestinal obstruction. The fetal mortality in patients in whom forceps had been tried and failed amounted to 27 per cent, and the early mortality of the infants who survived delivery was 11 per cent; the fetal or infant mortality in such cases being from subdural cerebral hemorrhage due to forceps pressure.

The axiom, "Once a cesarean, always a cesarean", is open to question. If the same conditions exist in a subsequent pregnancy which made a previous section necessary, there is no doubt of its truth. Even under the ideal surgical conditions which exist today, I do not feel it wise to allow a patient to be submitted to more than two cesarean sections. The patient is advised that after the second section, if the first baby is alive and well and the baby just delivered appears healthy, that sterilization should be done. This rule, of course, is objected to occasionally on religious grounds, and under such circumstances cesarean section is repeated when indicated. In my series of cases, there was one patient upon whom I performed five cesarean sections for this reason.

INDICATIONS FOR LOW CERVICAL SECTIONS

Frank, of Cologne, in 1907, introduced the technic of the low cervical section, which was

modified by Selheim and by Beck and DeLee in this country. In the past ten years, I have done 58 low cervical sections, the entire number of sections done in my private practice during this period. In my mind, there is no doubt as to the superiority of this technic over the classical cesarean section. My reasons for making a low cervical operation elective in all instances are:

1. Because the incision is placed in the inactive lower segment of the uterus, healing is more complete, and union is primary. In the 14 patients in whom cesarean section was repeated it was difficult to identify the scar of the former operation.

2. There is less likelihood of adhesions between the scar and the intestines or the abdominal wall. In the 14 repeated sections there was not one instance in which adhesions were encountered.

3. The blood loss in the low section is much less than in the classical section because the placental sinuses are rarely encountered; and if the proper medication has been given, the amount of blood lost may be reduced to less, or rarely more, than in a normal delivery.

4. The likelihood of rupture of the uterus in subsequent pregnancies is definitely minimized because the lower segment during labor acts as little more than a canal through which the baby is driven. It is noteworthy that while the incidence of rupture of the scar in the classical cesarean section is 4 per cent, not more than 25 cases of rupture have so far been reported for the low cervical section in the entire world literature (Holland).

5. The likelihood of infection in the scar is reduced because of the comparatively smaller degree of vascularity in the lower segment, and also because of the great natural protective mechanism against infection in this region. Therefore, should infection occur, it is more apt to be localized under the bladder fold and is easily accessible to surgical drainage, in contrast to the rapid extension of infection which will occur in an incision in the fundus of the uterus where the circulation is generous with more probability of dissemination into the peritoneal cavity and into the general circulation.

If it is accepted that a temperature of 100.5°

for three successive days is evidence of a morbid state postoperatively, evidence is furnished in my group of cases to substantiate the contention that the incidence of infection is reduced to a minimum with the low cervical section, for only five of the 58 patients, or 0.86 per cent, ran this amount of temperature.

6. It is reasonable to expect a smoother convalescence with the low type of operation, in view of the fact that the intestines are not exposed, and if the proper procedure is followed, there should be a negligible amount of spill of amniotic fluid and blood into the peritoneal cavity. This claim has been justified in my series of cases, for the amount of distention observed was as follows: None in 35 cases; very slight in nine; slight in ten; and marked in four cases. There was no mortality in this series of 58 cases. However, I must state that these were all elective sections, done under conditions which are designated as ideal for cesarean section.

7. The fear of bladder injuries in the low cervical section is unwarranted because there is such definite demarcation of the anatomy of this region that no excuse can be allowed for trauma to the bladder. No difficulty has been encountered in repeated operations in securing sufficient vesico-uterine peritoneum to wall off the field of operation and to peritonealize all raw areas when the uterine incision is closed.

SUMMARY

The argument that the classical operation should be selected because of the ease and rapidity with which it is done can no longer be accepted as valid. The insistence that the low cervical section offers more technical difficulties is unfounded. A more intimate knowledge of anatomy is necessary for the low cervical operation, but after some experience with the important technical details of the operation, a technic can be developed which requires very little longer than the classical operation. And certainly, with strict adherence to a few minor details, an operative field is left which is more conducive to primary union, and there will be less peritoneal irritation and less likelihood of postoperative hemorrhage.

The average time required in my group of cases to perform the low cervical section was 28 minutes. Since blood loss can largely be con-

trolled in the lower segment, there is less reason for haste which has always seemed necessary when performing cesarean section.

I have used general anesthesia in the form of ethylene in all cases, without complications. While the operation can be accomplished under local anesthesia, I see little reason for its employment except in instances where general anesthesia might be definitely contraindicated.

A REVIEW OF THE CESAREAN SECTIONS PERFORMED IN NEW ORLEANS DURING THE YEARS 1927-1936 INCLUSIVE*

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NEW ORLEANS.

In 1937 the New Orleans Gynecological and Obstetrical Society reported a survey of the cesarean sections performed in the City of New Orleans during the years 1921-1926, inclusive, at a joint meeting with the Orleans Parish Medical Society. Since that time many similar surveys from other cities have been reported. It was felt at the time that this summary would bring to the attention of the profession certain points regarding the indications, contraindications and technic of the operation, and that thereby an improvement in the results would result. We now present another survey of the operations performed during the 10 years 1927-1936, and will compare the two surveys in their various aspects. It was thought best to present the material in tabular form, as was done in the first report.

It will be noted that the Presbyterian Hospital is not listed in the second series, because of the fact that it was closed several years ago. The Flint-Goodridge Hospital was omitted because of the fact that it has undergone extensive changes in this period, and it was felt that the

number of obstetric cases handled in that institution since its reorganization is not sufficiently large to be of value in this compilation. The Mercy Hospital was just beginning to function at the time of the first survey, so was not covered by that report, but is included in the present study.

It will be seen from Tables 1 and 2 that the incidence of cesarean section in hospital deliveries has risen from 1.8 per cent in the first series to 2.08 in the second; in other words, it has practically doubled. In the first survey, it was found that .48 per cent of all deliveries in the city during the period covered had been by the cesarean route, while in the second survey this figure has risen to 1.19 per cent, which means that the operation was performed two and a half times as often in the second period as in the first.

The question naturally arises, is this marked increase in line with the best obstetric practice? We feel that a certain increase in incidence was justified, in view of the poor results reported in the first series, but there is room for doubt as to the necessity for this rather marked rise.

Tables 2 to 7, inclusive, do not require any particular discussion. The fact that 313, or nearly one-fourth, of the patients, were multiparae may be explained in some cases on the basis of previous obstetric difficulty, in others by the occurrence of placenta previa, or heart disease, as complications. As regards anesthesia, it will be noted that ethylene-oxygen was the most popular. Local and spinal analgesia were not very much in favor. Some obstetricians are very partial to local analgesia for this operation, but spinal is, as a rule, employed only under special indications.

The indications for cesarean section have been greatly broadened in the past few years; many feel that the tendency has gone too far. In Table 9 it will be seen that contracted pelvis is given as the indication in 480 cases, and disproportion in 71, a total of 551, or nearly one half the entire number. In the first series, the figures were 107 and 16, respectively, a total of 123, or about 42 per cent of the operations. In the present series, as in the first, it was noted that in such cases the pelvis measurements were frequently lacking from the records; however, the charts are much better in this respect than

*The Report of a Special Committee of the New Orleans Gynecological and Obstetrical Society.

Footnote: We wish to express our thanks to the various hospitals and to their staffs for permission to review their records in this study.

formerly. It is to be noted that eclampsia was an indication much less often than in the first series; in the 1927 report this condition was the complaint in 41 of the 291 cases (14 per cent), while in the present series it is noted in only 27 cases (2.4 per cent). "Other toxemias" constituted the indication in 12 cases in series one and 51 cases in the present study, giving approximately the same incidence. Placenta previa is noted as being performed about as often in the first as in the second series (33 and 114 cases, respectively), which is somewhat of a surprise, as we were under the impression that this condition was being treated by cesarean section more frequently now than formerly. It was found on the whole, that the indications were much more carefully recorded on the charts than was formerly the case.

Tables 10 and 11 need no particular discussion. It was found that the morbidity after the low operation was approximately the same as after the classical, which was contrary to our expectation that it would be somewhat lower.

In Table 12, it is to be noted that acute dilatation of the stomach was recorded only once in the 1108 cases, whereas it was listed 17 times in the first series of 291 operations. We feel that many of the cases so classified were rarely instances of peritonitis.

The type of operation (Table 13) was more carefully described in the records in the second series than in the first. In the former report 60 per cent were of the classical type, 12.7 per cent of the low cervical type, 4 per cent were listed as Porro, and 39.5 per cent were not satisfactorily described. In the present series, 49.2 per cent were classical operations, 44 per cent low, 3.5 per cent were Porros, and only 3.3 per cent were not clearly described. We are of the opinion that many of the unclassified cases in the first series were of the classical type, and that hence the shift to the low operation is even more marked than is shown by the figures given. The committee feels that this is the proper tendency; it will be noted later that the mortality for the low section was found to be about one-half that for the classical operation.

The most interesting and important finding in this investigation, was the marked reduction in both maternal and fetal mortality rates. The former was cut from 16.1 per cent to 5.9 per

cent, and the latter from 18.9 per cent to 10.8 per cent. In the first series there were nine maternal deaths from peritonitis and septicemia, while 22 were due to these causes in the second survey; this constitutes a percentage reduction, but is still much too high a figure. Sixteen of the 41 patients with eclampsia in the first series died, and nine of the 27 in the second study, confirming the opinion that cesarean section is not to be recommended as the treatment for this condition. Embolus accounted for five deaths in the first series of 291, and for only two deaths in the 1108 cases of the second survey. As set forth in the last table (Summary), there were 39 deaths in the classical operations, or 7.2 per cent, 18 in the low (cervical) group, or 3.7 per cent, and 4 or 10.3 per cent in the Porro cases. This would appear to bear out the contention of many obstetrical surgeons that the low operation is the one of choice.

Most of the New Orleans hospitals have adopted the recommendations made in our 1937 report that consultation with an obstetrician or gynecologist be obligatory before a cesarean section is performed. We feel that this has been a factor of considerable importance in the lowering of the mortality rate. It was noted, however, that in some instances the consultant was neither an obstetrician nor a gynecologist, hence was hardly qualified to pass upon the question at issue. We would recommend that this matter be brought to the attention of the directing heads of the various hospitals. We would also urge that the rule as to consultation be adopted by those hospitals that have not as yet done so.

CONCLUSIONS

1. The reductions in maternal and fetal mortality, as set forth above, are very gratifying. We feel that this is due in great part to more careful studies of our patients both ante and intrapartum, to better attention to the contraindications and to greater care in selection of the type of operation and of the anesthetic. However, there is room for further improvement, as the mortality rate of 5.9 per cent is still too high.

2. It is noted that the hospital records are much better kept than formerly.

3. The indications for the operations appear,

as a rule, to be more clearly set forth than was the case at the time of the first report.

4. Cesarean section appears to be on the increase in this city, being performed about two and a half times as often as at the time of the first report. There is some question as to the necessity of delivery by this route in some cases.

5. It would appear that cesarean section should not be employed to any extent in eclampsia. It might be used in certain cases, under special indications.

6. Resort to this operation appears justifiable in some cases of placenta previa; the nearer to term, the more tightly closed the cervix the more pressing the indications. It is generally accepted as the best treatment for central placenta previa.

7. The superiority of the low (cervical) operation over the classical section seems to be well established, and this survey adds further evidence to that effect.

8. In conclusion, while we wish to express our gratification at finding this marked im-

provement in the results, we would stress the importance of several points in an endeavor to reduce further the mortality rates:

- a. The indications should be restricted as much as possible.
- b. Patients should be carefully studied in the prenatal period, in order that potential section cases may be discovered.
- c. Such patients should be handled with the greatest attention to asepsis during labor, limiting examinations (particularly vaginal) as much as possible.
- d. The type of operation to be performed should be carefully considered, especially in potentially infected cases.
- e. More frequent use should be made of the Porro operation (hysterectomy) or of craniotomy in the actually infected cases, with fever already present.
- f. As stressed in the body of the report, consultation with an expert obstetric surgeon should be more frequently resorted to than has been done in the past.

TABLE 1
STATISTICAL SUMMARY

Hospital	1921	1922	1923	1924	1925	1926	Total	Rate
Baptist								
Cesareans						6	6	
Deliveries						213	213	2.8
Charity								
Cesareans	24	16	8	12	12	15	87	
Deliveries	917	994	1097	1298	1358	1453	7117	1.2
Hotel Dieu								
Cesareans	5	14	2	4	10	9	44	
Deliveries	420	294	472	535	597	537	2855	1.5
Mercy								
Cesareans				2	9	4	15	
Deliveries				115	172	223	510	2.9
Presbyterian								
Cesareans		9	6	6	5	4	30	
Deliveries		87	146	141	113	63	550	5.4
Touro								
Cesareans	21	18	11	16	21	22	109	
Deliveries	482	493	591	668	892	919	4045	2.7
Flint-Goodridge								
Cesareans	2	2			3		7	
Deliveries	25	32	42	42	51	45	237	3.0
Woman's Dispensary								
Cesareans				2			2	
Deliveries		152	122	180	163	179	796	.025
Total								
Cesareans	52	59	27	42	60	60	300	
Hospital deliveries	1844	2052	2470	2979	3346	3632	16323	1.8
Total N. O. deliveries	10086	10162	10268	10870	10139	10441	61966	.484

TABLE 2
STATISTICAL SUMMARY

Hospital	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Total	Rate
Baptist												
Cesarean	5	3	6	11	10	17	12	17	17	20	118	3.0
Deliveries	280	313	390	352	381	379	329	475	439	528	3866	
Charity												
Cesarean	19	19	15	37	42	40	45	58	54	66	395	1.4
Deliveries	1506	1703	1933	2072	2528	3266	3449	3573	3894	3847	27771	
Hotel Dieu												
Cesarean	20	12	11	9	11	4	9	10	18	13	117	2.3
Deliveries	565	513	515	573	467	430	418	422	518	580	5001	
Mercy												
Cesarean					7	6	3	4	6	8	34	1.1
Deliveries	222	292	289	291	296	354	322	322	325	432	3145	
French												
Cesarean	1	3	7	2	2	4		4	1	7	31	1.7
Deliveries	35	222	198	242	234	195	135	173	140	141	1715	
Touro												
Cesarean	33	38	36	26	51	33	38	30	55	55	395	4.9
Deliveries	933	800	817	830	869	711	721	784	814	849	8128	
Woman's Dispensary												
Cesarean	4	1	2	2	3	3	1		2		18	0.6
Deliveries	178	220	253	308	307	333	367	330	355	355	3003	
Total												
Cesarean	82	76	77	87	126	107	108	123	153	169	1108	
Hospital deliveries	3719	4063	4395	4668	5082	5665	5741	6079	6485	6732	52629	2.08
N. O. Deliveries	10463	10123	9383	9339	9207	9142	8532	8825	8959	8963	92936	1.19

TABLE 3

AGE	
Under 20.....	53
20-29	376
30-39	219
Over 40	47
Not stated.....	23
Not analyzed.....	390

EXAMINATIONS

Not mentioned or not analyzed.....	536
None	239
Rectal only	4
One examination	131
More than one examination.....	198

TABLE 5

POSITION

PARITY	
Primiparae	381
Multiparae	313
Not stated.....	24
Not analyzed.....	390

Not stated or not analyzed.....	645
Vertex	392
Transverse	16
Breech	54
Face	1

STAGE GESTATION

Premature	123
Term	576
Note stated.....	13
Not analyzed.....	396

MEASUREMENTS

Not stated—(miscellaneous cases).....	283
Not stated in contracted pelvis.....	183

TABLE 4

DURATION OF LABOR

Not begun	354
Aseptic test	4
Began—first stage	316
Doubtful	3
Second stage	14
Not stated or not analyzed.....	417

PREVIOUS SCARS

Ruptured	3
Inadequately described.....	23
Microscopic examination.....	0
Not described	66
Good	34
Poor	13

TABLE 6

MEMBRANES

Not mentioned or not analyzed.....	662
------------------------------------	-----

Not ruptured	428
Ruptured	18
PREVIOUS ATTEMPTS AT DELIVERY	
Pack	5
Forceps	5
Version	4
Manual dilatation	2
Bag	8
Induction (method not stated)	1
Catheter induction	3

TABLE 7

LENGTH OF OPERATION

Under 1 hour	434
Over 1 hour	136
Not stated or not analyzed	538

OTHER OPERATIONS

Resection tubes	130
Myomectomy	11
Complete hysterectomy	3
Appendectomy	0
Left oophorectomy	2
Hernia	3
Bilateral salpingo oophorectomy	3
Unilateral salpingo oophorectomy	1
Repair of ruptured uterus	1
Accidental enterostomy with closure	1

TABLE 8

ANESTHETIC

Ether	71
Ethylene	270
Nitrous oxide	20
Spinal	34
Local	24
Epidural	12
Cyclopropane	16
Not stated	16
Chloroform	1
Others not stated or analyzed	
Number of surgeons	98

TABLE 9

INDICATIONS

Contracted pelvis	480
Eclampsia	27
Other toxemias	51
Placenta previa	114
Premature separation placenta	34
Disproportion	71
Previous cesarean section	68
Malposition	25
Inertia—prolonged labor	16
Dystocia	2
Cervical scar tissue	25
Elderly primipara	21
Elderly multipara	2

Ruptured uterus	1
Rupture cesarean scar	2
Cardiac lesions	22
Tuberculosis	8
Carcinoma cervix	3
Fibroids	15
Previous myomectomy	2
Bandl's contraction ring	2
Bicornuate uterus	2
Stenosis cervix	4
Congenital malformations (in mother)	3
Ovarian cyst	2
Herniation of uterus through rectus	1
Previous difficult delivery	1
Previous obstetrical history	1
Acquired pelvic deformities	5
Not stated	7
Ruptured membranes	1
Pyelonephritis and hydronephrosis	4
Vaginal lesions	11
Large periurethral abscess	1
Intestinal obstruction	1
Error in diagnosis	1
Habitual death of fetus	2
Bronchopneumonia	1

TABLE 10

TYPE PREVIOUS LABORS

(In Multiparae)

Forceps	40
Version	5
Stillbirths	16
Cesarean	148
Normal	78
Difficult	8
Not stated	11

TABLE 11

POSTOPERATIVE FEBRILE MORBIDITY

(Criterion—100° F. After Operation)

	Total Sections	Febrile	Incidence
Classical	545	348	63.8%
Low	488	304	62.3%
Porro	39	27	71.0%
Not stated and others	7		

TABLE 12

COMPLICATIONS

(Excluding Deaths)

Pulmonary	14
Kidney and bladder	28
Postpartal convulsions	1
Dilated stomach	1
Postoperative vaginal hemorrhage	3
Phlegmasia alba dolens	4
Wound infection	15
Mastitis	3

Evisceration	4	Embolus	2
Diabetes mellitus	1	Doubtful	2
Puerperal infection	4	Pyelonephritis	1
Septicemia	1	Postoperative intestinal obstruction	1
Utero-abdominal fistula	1	Paralytic ileus	2
Paralytic ileus	1	Cerebral hemorrhage	0
Tuberculosis	1	Postoperative shock	2
Peritonitis	1	Spinal anesthetic	1
Lues	1	Antimony poisoning	1
Puerperal sepsis	8	Moribund	1
Cardiac	1	Tuberculosis	1
Surgical shock	3	Renal suppression	1
Infection hypo- and intravenous therapy	2		
Toxic erythema	1	Total	64
Endocarditis	1		

TABLE 13
TECHNIC

Classical	545
Cervical	488
Porro	39
Miscellaneous	1
Not stated	35
Total	1108
Maternal Deaths	64, or 5.9 per cent
Fetal Deaths	117, or 10.8 per cent

TABLE 14

MATERNAL MORTALITY 1921-1926

(Analyzed by Causes of Death)

Peritonitis	6
Septicemia	3
Rupture uterus or scar	3
Toxemia	3
Eclampsia	16
Placenta previa	1
Premature separation placenta	1
Acute dilatation of the stomach	2
Pneumonia	1
Postoperative vaginal hemorrhage	2
Heart lesions	2
Embolus	5
Doubtful	2
Total	47

TABLE 15

MATERNAL MORTALITY 1927-1936

(Analyzed by Causes of Death)

Peritonitis	10
Septicemia	12
Toxemia	2
Eclampsia	7
Placenta previa	2
Acute dilatation stomach	1
Pneumonia	8
Postoperative vaginal hemorrhage	3
Heart lesions	4

TABLE 16

MATERNAL MORTALITY

(Analyzed According to Type of Operation)

Classical	39, or 7.2 per cent
Low	18, or 3.7 per cent
Porro	4, or 10.3 per cent
Portes	1, or 50.0 per cent
Not stated	2

TABLE 17

MATERNAL MORTALITY

(Analyzed by Years)

Year	Total
1927	7
1928	8
1929	6
1930	9
1931	9
1932	5
1933	4
1934	4
1935	8
1936	4
Total	64

TABLE 18

MATERNAL MORTALITY

(Analyzed as to Operative Indications)

Contracted pelvis	7
Eclampsia	9
Other toxemias	2
Placenta previa	7
Premature separation placenta	1
Disproportion	3
Inertia—prolonged labor	0
Cervical scar tissue	1
Rupture uterus or scar	1
Elderly primipara	1
Malpresentation	1
Bronchopneumonia	1

Bicornuate uterus	1
Cerebral hemorrhage	1
Malposition	1
Charts not analyzed for this data.....	27

TABLE 19

MATERNAL MORTALITY

(Analyzed as to Duration of Labor)

Elective	1
Not begun	20
Begun	8
Examined	3
Membranes ruptured	0
Attempts at delivery.....	2
Long labor	4
Bag induction	1
Catheter induction	1
Duration not stated or not analyzed.....	26

TABLE 20

FETAL MORTALITY

Pelvic contraction	4
Placenta previa	3
Premature separation placenta.....	3
Toxemia	1
Rupture uterus or scar.....	4

Neglected labor	1
Congenital malformations	3
Tonic contraction uterus.....	1
Cerebral hemorrhage	0
Prematurity	31
Uterine fibroids	3
Previous attempts at delivery.....	1
Not stated	51
Asphyxia	2
Pneumonia	1
Stillborn	8
Total	117
Per cent	10.8

TABLE 21

SUMMARY

(Comparison with Previous Report)

	1921-26 (Inclusive)	1927-36 (Inclusive)
Total cesarean sections.....	300	1108
Per cent cesarean sections.....	1.8	1.2
Total maternal mortality.....	47	64
Per cent maternal mortality.....	16.1	5.9
Total fetal mortality.....	55	117
Per cent fetal mortality.....	18.9	10.8

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THE 1938 ANNUAL MEETING

The 1938 meeting of the Louisiana State Medical Society was a great success from every point of view. There was a large attendance, 1478 being registered, including

members of the society, their wives, medical students, interns and so on.

Outstanding in the events was the evening session on Tuesday, May 3. The President, Dr. Charles M. Horton, delivered a splendid, thought-provocative and constructive address dealing largely with the many economic and social problems that beset the medical profession at the present time. The annual oration, by Dr. Edward H. Cary of Dallas and a former President of the American Medical Association, was very well received. Well delivered, and well thought out, it was a model for similar addresses. Dr. Joseph A. O'Hara, President-elect, gave a truly interesting address which can be read and should be read by every member of organized medicine as it appears in this month's issue of the journal. The open meeting was followed by the President's reception and supper dance which was enjoyed by every one who attended.

An unusually good scientific program was arranged by the chairmen of the several sections. There has not been a meeting for some years at which the section sessions were so well attended and in which there was so much discussion.

The list of officers elected for next year appears in the Louisiana news section of the journal. The Society is indeed fortunate in having as its President-elect to succeed Dr. O'Hara, Dr. Clarence A. Lorio. Dr. Lorio is one of the outstanding practitioners of medicine in the state. A brilliant speaker and a charming person, he will bring to the office personal attributes which will make possible a smooth conduct of affairs of the Society when he becomes President. A constructive thinker and a man of ideas, the Society may anticipate a decidedly advanced administration under this able man.

The House of Delegates at their sessions passed some very excellent measures which will be recited in the report of the Secretary-Treasurer who, fortunately for the Society, was re-elected for a period of two years.

NEW ORLEANS AS A CENTER FOR
MEDICO-MILITARY TRAINING
PAST AND PRESENT
1917-1918 and 1938

On Thursday, May 11, 1938, at 11 a. m., Dr. Matas lectured to the officers of the Medical Reserve Corps on "The Military Surgery of the Blood Vessels." He introduced his lecture by recalling the first military school for reserve officers established in New Orleans under his direction in 1917, by order of Surgeon General Gorgas, in connection with preparation of officers of the reserve corps for service overseas. At that time, practically the entire faculty of the Tulane Medical School had enlisted in the Tulane Unit—Base Hospital No. 24, organized by Dr. Matas, and stationed at Limoges, France. All teaching had been suspended, and only a few of the instructors, for official reasons or otherwise, were detained in the City. Major Matas, M. R. C., had to effect complete organization of both faculty and courses. The medical reserve course just completed had a distinct advantage over that of 1917, in that it found the medical faculty in full force, functioning under normal conditions, and was therefore in every sense a real postgraduate polyclinic school. Courses under the faculty of the Tulane Medical School were supplemented by lectures by army officers on medical military subjects.

The original school was known as the Officers' School for Instruction in War Fractures and Other War Wounds, and collateral Information in Modern War Surgery. Presentation of standardized surgical material and appliances, and the latest improvements and advances in surgical technic as then developed at the front opened up a large program. A syllabus of some 100 mimeographed pages was prepared and presented in a four weeks' session by Dr. Matas and the following faculty: Dr. F. W. Parham (Major, M. R. S.), Drs. Hermann B. Gessner, Isidore Cohn, Charles W. Duval, Henry Bayon, W. C. Smith, Amedee Granger, Paul

McIlhenny, J. P. Lebenhoffer, Lucian H. Landry, Russell E. Stone, Simon Geismar and I. M. Gage.

Laboratory courses, clinics, and lectures were held at the Charity Hospital, Medical School of Tulane University, and the Touro Infirmary. Charity Hospital was official headquarters of the school, where the major fracture clinics were held and army orders for the officers of the class were received. Students were given the privilege of the library of the Tulane Medical School, of the O. P. M. S., and the hospitality of the Young Men's Christian Association and the leading social clubs; and their wives were entertained with personally conducted tours about the City.

At the close of each session the attendance and grading of the officers were recorded and reported to the Surgeon General's office. The school continued for eight sessions, from November 5, 1917, to June 30, 1918; and during these eight sessions, a total of 138 students officers were in attendance, of whom 11 were majors, 34 captains, 93 lieutenants, coming from 23 military posts in ten states. The school in New Orleans was one of four similar organizations throughout the country, the others being located in Boston, New York and Chicago. New Orleans was selected as the southern center due to the advantages offered by the large mass of material at the Charity Hospital.

The great enthusiasm with which the school was conducted and its success were evinced by numerous expressions of appreciation after the war by students who had been in attendance and by the Surgeon General.*

The 1938 course consisted of five days of intensive instruction in all the branches of medicine, and in military affairs. Sixty-seven officers registered and inactive duty credit was allowed by the War Department.

*Foot Note: The contributions of the medical profession of Louisiana to service during the World War have been related in detail in an article entitled "Medical Mobilization," by Dr. R. Matas and Miss Ethel Hutson, in "Louisiana in the War," published by the Times-Picayune in 1920, pp. 68-73, to which those who are particularly interested in the activity of the medical profession are referred.

The course was received with much enthusiasm, and it is planned to make it an annual event.

MORE ON TAXATION

Again we want to call attention to the members of organized medicine that among the many arguments against State Medicine there is one that has not been sufficiently accentuated nor stressed. We are referring to the fact that State Medicine as experienced in England and Germany has been very expensive. In England the initial estimates as to the cost were actually almost trebled the first year that the insurance scheme was put in effect. This country is being taxed right and left and except in a few states and few communities there seems to be no effort made to reduce taxes and to keep within the bounds of reason in spending the monies obtained by taxing the citizens of the state and wasted in great part. Every new scheme costs money and while the governmental statisticians may figure a plan for State Medicine which will cost so much according to their figures, in practice it will cost much more. It has been said that a plan for State Medicine has been already drawn up and is waiting now for a propitious time for presentation by the President. This will simply add more to the burdens of those who are paying great sums to maintain the government.

More specifically in our own State of Louisiana the cost of government has in-

creased in the last ten years some forty-five million dollars. This increase which, according to the newspapers, was said to be principally for new services, actually represents somewhat under a third of the expenses of roads and relief. The rest of the monies have gone for new undertakings, new jobs, new what nots, all of which together total more than thirty million dollars a year more than there was being spent ten years ago. We in Louisiana are paying a gasoline tax which is the largest of any state in the Union and equal only to two or three others. We are one of the few states that is paying an income tax and a sales tax. We are one of the few states that is able to collect large amounts of money from severance taxes. In addition to these big taxes our public debt will soon reach one hundred and seventy million dollars, a tremendous increase in the state debt in the last few years and the money that must be paid back by our children, if not by ourselves.

If State Medicine should ever become an accomplished fact the Federal Government will not bear the entire expenses by any means. A very goodly percentage of it will have to come from the states and if it is put in, we heavily taxed Louisianians must pay our share. We wonder if the proponents of State Medicine realize that it will require further increase in our taxes; that this measure, which we of the medical profession think is entirely unnecessary, will require large sums which to reiterate, we think would be an absolutely needless waste of money to carry on a totally unnecessary project.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

HOTEL DIEU

The regular monthly meeting of the Staff of Hotel Dieu was held in the Nurses' Lecture Room of Hotel Dieu on Monday, April 18, 1938 at 8:00 p. m. The meeting was called to order by the President, Dr. A. D. Mouledous, and with the Secretary, Dr. C. E. Gorman, at the desk.

The Scientific Program consisted of Clinico-pathologic Conference by the Department of Pathology.

Dr. M. Couret: We have for discussion two cases that were recently in the institution and I believe will be interesting because of their infrequency. The first shows the marked variations in the metastases from the parent tumor that is occasionally met in tissues from the same individual. At times this may be misleading and much care should be taken so that we do not confuse such cases with those of two distinct neoplasms occurring simultaneously. It is so very uncommon to find metastases in the axillary nodes, of the type that we found from a typical mammary carcinoma simplex, that for a while we were in doubt whether or not it originated from the breast tumor.

The other case is one of two definite and distinct neoplasms occurring simultaneously in the same individual: one in the bronchus and the other in the urinary bladder. We were fortunate in getting an autopsy on this case. The tumor of the bladder had been diagnosed by biopsy but while the other was suspected, no definite diagnosis had been made. My associates, Dr. John Couret and Dr. Kriz, will give you the details of these cases.

Dr. John Couret presented a lantern slide demonstration of two cases of carcinoma simplex of breast with axillary node metastasis. In one case the metastatic tumor showed a structure similar to the primary neoplasia; in the second case the two growths were dissimilar in architecture.

Dr. J. R. Kriz: We present this third case because here we found what seems to be two primary tumors in the same individual; one tumor arising from the bronchus, the other from the mucosal surface of the urinary bladder. At autopsy we found in the lung a small whitish-yellow mass about 2 cm. in diameter in the region of the hilum. Dissection of this area revealed complete obstruction of the right bronchus supplying the right lower lobe. Distal to the obstruction was a large abscess filled with foul-smelling material. We did not find any metastases anywhere else. The regional lymph nodes appeared normal. There were no metastases in the liver or adrenals. Usually when we do have primary carcinoma of the lung we expect to find metastatic foci in the adrenals, kidneys and brain. However, in this case

we found the neoplasm only in the region of the hilum of the lung.

On examination of the urinary bladder, we found a diffuse, ulcerated, slightly elevated mass, about 4 cm. in diameter, in the region of the right ureter and obstructing it to the extent that there was a hydronephrosis on that side. The gross appearance of the lesion was somewhat obscure because this patient, I understand, was fulgurated previously. However, this mass was ulcerated and covered with a purulent exudate. The only other interesting finding was the abnormal position of the liver and gallbladder which extended about 4 cm. below the brim of the pelvis. Lantern slides show both the gross and microscopic appearance of these tumors.

I have studied the microscopic sections of both tumors extensively and cannot decide whether they are two primary carcinomas. From the study of the sections, I feel that this is a primary carcinoma of the bladder with metastasis to the lung. However, due to the anaplastic nature of the cells there may well be two primary tumors in the same individual although multiple primary carcinomas are rather rare.

Dr. John Couret: This patient has been ill with pulmonary symptoms for a year and a half. His bladder symptoms date back six months. Although both tumors are quite similar histologically, it would be most unusual to find a metastasis from a bronchiogenic carcinoma only in the bladder. Similarly it would be rare to see a bladder malignancy metastasizing only to a single point in the lung and no where else in the body. It is believed therefore that this patient presented two primary malignant growths and that death was due to the lung abscess.

The next presentation was a paper of Dr. Frank L. Loria on "Neoplasia of the Testes" with report of a case of teratoma, which will appear in full in a subsequent number of the journal.

J. T. NIX CLINIC

NEW ORLEANS

At a meeting held in May, Doctor A. E. Smith presented the following paper:

CONSIDERATIONS OF THE PULPLESS TOOTH

The purpose of this article is to afford encouragement to those unwilling to follow the lines of least resistance and extract teeth for no better reason than that the pulp has been removed. The vital question of focal infection has pointed the finger of suspicion to every pulpless tooth, many times regardless of roentgenographic findings. There are many extenuating circumstances that

will justly warrant the retention of the pulpless tooth. The retention of such teeth may bring to our minds such vital considerations as the patient's health and various systemic conditions. Age of the patient is surely an important consideration in such circumstances.

This paper does not tend to insist upon retention of the abscessed tooth, but it does tend to show the advisability of retaining what may be considered the pulpless tooth which does not show peri-apical infection, provided careful roentgenographic study has been made. We may take for example the condition of iritis, and where may be found an abscessed tooth. Such teeth should be removed unless the infected area is definitely accessible and treatment should be rendered with a view not only of destroying the infected area, but to create bone regeneration. Such results are possible in such cases. If such cases cannot be unquestionably cured, then extraction of the involved tooth is definitely advised.

In further consideration, we must bear in mind that if the lamina dura is broken and there is evidence of resorption of the apex of the root, such teeth are beyond the safety point. We may consider conservative treatment ill advised in patients over fifty years of age and having systemic complications. Teeth affected by periodontoclasia to the extent of from one-third to one-half of the root length may be considered a bad risk.

There is little or no contention other than that the dentist should keenly feel it his duty to the patient in preserving teeth and health. Also, we may consider the patient's deep appreciation for the dentist in retaining such teeth.

The pulpless deciduous tooth does not warrant immediate extraction. The retention of such teeth until time for normal exfoliation is vitally important. Let us not lose the view that early removal of deciduous teeth is largely responsible for much of the malocclusion in adult life. In consideration of the deciduous teeth, let us not lose sight of the fact that parents today are bending every effort to prevent exposed dental pulps as well as non-vital teeth. Yet we must realize that even in the extreme, such as the non-vital tooth, every effort should be made to retain these teeth for their normal period of service.

A deciduous tooth which has become putrescent may be saved if too much tissue has not become involved adjacent to the incoming permanent tooth. The infected tooth should be drained until the acute stage is past, if an acute abscess has developed, and then sulphuric acid neutralized by sodium bicarbonate may be used to remove the decomposed and infectious material from the pulp chamber and roots. After sufficient treatment to insure sterility, an acceptable material may be used for

filling the pulp chambers. The materials used are largely a matter of individuality.

Let us now consider the pulpless permanent tooth. The reaction against the pulpless tooth has grown because of the difficulties and uncertainties surrounding the results of treatment. Rather than persistently attempting to master these difficulties and obtain favorable results, many have taken the easier road of extraction. Would it not show poor judgment and surely lack of initiative to deprive thousands of the comfort and function of natural teeth which might be salvaged in many instances? True, authorities are divided as to the exact role of dental focal infection in relation to systemic diseases, yet this does not lessen the responsibility of the dentist in extending every effort in attempting to preserve and retain the pulpless tooth. When a focus of infection is discovered and considered responsible for a diseased condition elsewhere, it requires the highest type of diagnostic ability to prove that this is true. The cure of the patient after removal and treatment of a suspected focus is generally considered the most convincing evidence that the focus was the source of the infection. However, such an outcome may be due to a general tonic stimulus resulting from the removal of one cause of a lowered systemic resistance. To extract pulpless teeth as potential foci of infection without clinical or roentgenographic evidence to substantiate such assumption seems as unsound as removing healthy organs of the body.

Just when should a tooth be considered a potential focus of infection? Bacterial invasion of the dentin is a common occurrence as few mouths are free of carious teeth. Is it not reasonable to assume that such infections are being carried into the circulatory system in the case of an exposed pulp? It would be exceedingly difficult to set a time when a tooth may become a potential focus of infection without clinical evidence or any other evidence except such as may be found by microscopic or by bacteriologic tests. There may be occasions when other clinical history of a patient may justify the removal of teeth without clinical evidence or abnormality except that they are pulpless, but there must be other times and conditions preceding pulp removal when the same organisms are present and more virulent than in a properly filled pulpless tooth.

In conclusion we may consider the following:

The man who contends that all pulpless teeth should be extracted and he who says that none should be are merely on opposite ends of the question. The balance point lies about midway between them. Either extreme position is unreasonable and seemingly illogical. Therefore, both may be considered unscientific and extremely unten-

able. Radicalism has been abandoned and it is encouraging to note that the fad of radical exodontia is definitely losing its momentum and probably will soon be given its proper place in dentistry. For years we have been in this orgy of extraction, and fortunately we are in the beginning of a period of real understanding of the physiologic and pathologic significance of teeth, and this is surely evidenced by the protests arising from unbiased members of both the medical and dental professions.

Root canal operations are indicated for patients in good health who are free from disturbances that are recognized as secondary infections. In the latter conditions, when individuals are suffering with systemic disorders which originate from foci of infection, root canal operations are not indicated. The present uncertainty due to the difference of opinion by members of the profession and the impossibility of proof that roentgen ray negative pulpless teeth are not foci of infection without the extraction of the tooth to prove it, renders the decision of the tooth in question. Hence, for this type of patient these operations should not be undertaken.

Treatment of root canals must be considered as no different from treating an open wound in any other part of the body. It is a responsibility to be met with surgically clean methods of operating, a familiarity with root canal anatomy, and a study of tissue reactions as well as a careful technic.

By earnest cooperation between dentist and patient, the problem of a pulpless tooth and its involvement will generally be reduced.

MERCY HOSPITAL

The regular monthly meeting of the Staff of Mercy Hospital was called to order by the President, Dr. E. L. Zander, at 8 p. m. on Friday, May 13, 1938.

The scientific program began with the general discussion of two cases whose mimeographed histories were supplied to every staff member present.

The first was a case of osteomyelitis in a girl 12 years old who received an injury to the right knee about January, 1937, together with a fracture of the left clavicle. The knee injury was not serious and became apparently normal in a short time. Three months later, however, the knee became painful and swollen, especially the inner aspect of the right thigh just above the knee. There was no fever and no leukocytosis. A diagnosis of chronic arthritis was considered but with the help of roentgen ray study the case was finally thought to be one of osteomyelitis. At operation the inner aspect of the lower end of the femur was exposed and a small spicule of sequestrum was removed followed by thorough curetting of the diseased areas. The postoperative course was entirely uneventful.

Discussion of the case was opened by Dr. E. Maurer, followed by Drs. G. C. Battalora, L. A. Fortier, L. A. Monte, J. K. Howles, C. F. Bellone, R. J. Mailhes and closed by Dr. E. L. Leckert.

The second was an unusual case of cerebral hemorrhage in a man 34 years old. In January, 1938 he had a sudden attack of weakness followed by syncope and the development of a right hemiplegia exclusive of the face. He gradually recovered and had so little residual disability in the right arm and leg that he was able to return to work.

On March 29, 1938 he had a sudden intense headache followed by vomiting and semi-consciousness. There was a weakness of the right side of the face, partial aphasia, equal tendon reflexes in the upper extremities, active tendon reflexes in the lower left extremity and sluggish reflexes in the right leg. The eyes were normal except for a weakness in moving them to the right and for the suspicion of a left sub-retinal hemorrhage. He showed temporary improvement but finally died twelve days after the attack.

The highest blood pressure reading was 134/80. Blood, urine and spinal fluid studies were normal except for a moderate secondary anemia. Roentgen rays of the head were normal except for a calcified pineal gland displaced to the right.

Autopsy showed an area of hemorrhage about the size of the parietal lobe just beneath the cortex. In the base of the left hemisphere, just beneath the lateral surface, was another area of hemorrhage about the size of a hen-egg, approximately oval in shape with the long axis anteroposterior. The walls of the cavity were marked and filled with soft brown clots superimposed with freshly clotted blood. The ventricles and cerebellum were normal.

Discussion of this case was opened by Dr. H. Ashton Thomas, followed by Drs. Edgar Hull, L. A. Monte, G. H. Upton, L. A. Fortier, E. L. Leckert and closed by Dr. George Hauser who reported that there were no significant abnormal findings in the cerebral blood vessels.

The program was then climaxed by a joint presentation of three cases of "Cystic Diseases of the Kidney" by Drs. R. J. Mailhes and L. A. Fortier. Dr. Mailhes thoroughly discussed the clinical aspect of this condition after which Dr. Fortier presented the roentgen ray studies of the three cases. One was a polycystic kidney whereas the other two cases were cases of solitary cysts, one of which was complicated by stone formation.

Discussion from the floor was opened by Dr. Geo. Hauser, followed by Drs. L. J. Hanckes, L. A. Monte and closed by Dr. R. J. Mailhes.

After a short recess the meeting resolved into Executive Session.

E. R. Guidry, M. D., Sec.

FRENCH HOSPITAL

A regular monthly meeting of the French Hospital Visiting Staff was called to order on April 21, 1938, with Dr. Joseph Palermo presiding. The minutes were read by Dr. R. E. Rougelot.

Dr. Anderson discussed the death of Mr. F., acute encephalitis with hemorrhage in right frontal lobe; described the clinical course as beginning probably with a prodromal Bell's palsy, which was an unusual feature.

Dr. Harris recounted the pathology found at autopsy with the final diagnosis of encephalitis with apoplectiform hemorrhage of the right frontal lobe. His review of literature showed that hemorrhage of such character was not uncommon.

A symposium of appendicitis was then presented. Dr. T. A. Jung opened the program with the technic of appendectomy. The McBurney and Battle incisions have survived the test of time. McBurney's incision is used for chronic appendicitis and in children or in people with thin abdominal walls. The Battle incision is the best all round incision. The cecum is then picked up with sponge holder and the appendix located; meso is tied with chromic No. 2 and severed; purse string is applied, the appendix clamped and severed with the cautery or knife. The stump is inverted with the purse string or with Lembert sutures, and the meso tied. If the appendix is bad and easy to remove, do so, but if it can not be removed put in drain and close up.

Dr. J. J. Baron spoke on diagnosis. The appendix may be in at least nine positions, ranging from the pelvis to the retrocecal region to the ileum. The appendix gets infected easily because of its being a blind tube lymphoid tissue and with a poor blood supply. Rupture takes place usually in the retroperitoneal space. The first symptom is usually generalized pain, which may become localized in the appendiceal region; next soreness and tenderness in the right iliac region. Occasional nausea and vomiting may occur or there may be constipation or diarrhea. Very often the patient has loss of appetite. The right thigh may be flexed. Temperature varies from 99 to 101 degrees; if it is higher the condition is usually more than simple appendicitis. The leukocyte count varies from 9000 to 18,000, but total count does not always indicate the gravity of the lesion. The differential count is a better diagnostic aid. The higher the polys, the more the inflammation. In the gangrenous appendix pain does not last long, temperature falls, pulse becomes rapid and rupture usually takes place easily. The perforated appendix, in a few hours, begins to show signs of peritonitis with rapid pulse, ileus and rise in temperature. It is difficult to diagnose the appendiceal abscess. There is usually pain, fluctuation in temperature, sweating and perhaps a palpable mass. Appendi-

citis in children is more difficult to diagnose. The attack is usually sudden with nausea, vomiting and leukocytosis. Rectal examination produces pain due to the low level of the appendix and there may be some bladder irritation. Appendicitis in children must be differentiated from fecal impaction, typhoid, pneumonia, or intussusception. In chronic appendicitis there is slight tenderness in the right side but exertion produces soreness. Urinary calculus most often complicates the diagnosis of acute appendicitis, also pyelitis, gallstones, acute gallbladder, pelvic inflammatory disease or ectopic pregnancy must be considered. Pain in appendicitis always precedes nausea and fever. If fever precedes pain, it is not appendicitis. If vomiting precedes pain it is not usually appendicitis.

Dr. P. Graffagnino spoke on the complications of appendicitis. The most frequent complication of appendicitis is abscess, preoperative and postoperative. Location in appendiceal abscess depends on the location of the appendix; it is usually in between the cecum and parietal wall. The mass is usually localized. The next location is in the pelvis. Here it is difficult to distinguish between tubo-ovarian or appendiceal abscess. Another location is in the subphrenic space, where the pus goes upward retroperitoneally. There is septic temperature, chills and fever, and roentgen ray may show fixation of the diaphragm or elevation of the liver. The abscess may be to the left of the midline due to extension along the mesentery. Also there may be an abscess in the lumbar region with symptoms posteriorly or where pus gravitates. Peritonitis is the common complication of appendicitis. If the appendix is adherent, peritonitis is usually localized. Generalized peritonitis has profound systemic septic manifestations. Peristalsis is stopped with peritonitis and distribution can be determined by stethoscope. Suppurative thrombophlebitis is usually diffuse to portal radicles, causing swollen liver, icterus, profound septicemia. Paralytic ileus is a common and serious complication in which recovery is difficult and treatment is still unsatisfactory.

Dr. W. H. Harris presented the pathology in appendicitis. Bacteria: Colon bacillus is the most common offender, streptococci and staphylococci proportionately. The appendix is naturally disposed to infection, subject to kinking, constipation and slow emptying. Roughage lends itself to injury and subsequent infection. The theory as to blood borne infection to the appendix is not well borne. Oxyuris is often a concomitant factor and amebae are seen at times. Actual pathology in the appendix may be varied and extending from mucosa to serosa. The latter is important since it may extend to the peritoneum. There may be involvement of the blood supply due to infection with little general reaction. Eosinophiles in appendi-

citis usually indicate subsiding type. A proliferative or obliterative type of appendix may be beneficial, or deadly if obliteration is from above. Gas in the appendix also acts as an irritant factor. The blood count is often variable. Schilling count may be slightly beneficial in diagnosis. Degenerated neutrophils are significant of grave prognosis.

Dr. P. Montelepre announced the treatment of squamous cell carcinoma and various skin lesions with agent other than roentgen ray or radium or surgery. He has various cases as substantiating proof. Treatment consists of salve and subsequent similar treatments to induce granulations and healing.

Dr. Graffagnino discussed a committee to be composed of three members of the French Society, surgeon, pathologist, radiologist, president and secretary of the staff to act as the hospital advisory committee. It was moved and seconded to accept such a committee. Dr. Harris pleaded for proper recognition of the committee as well as the working board and not one which is of divided interests. This was unanimous.

Supper was then served to the attending members through the courtesy of the Board of Directors.

R. E. Rougelot, M. D., Sec.

HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Neuropsychiatry, Dr. T. A. Watters presiding:

General Remarks on the Schizophrenic Reactions (Dr. T. A. Watters): Much of the prognostic pessimism and therapeutic fatalism associated with the schizophrenic reactions has been transmitted through the decades as the result of Kraepelin's capitalizing on the end stages frequently seen in these disorders. His term dementia precox was first used by Morel thirty-nine years earlier. Morel, however, used it in a restricted way, for a disease he believed to be the result of poor heredity and "degeneracy." Kraepelin included under it the hebephrenias of Hecker and the catatonias and paranoid disturbances of Kahlbaum which, previous to this time, had been thought of as separate diseases, but which he considered different clinical types. With paresis as a nosologic model, he made of what were formerly several diseases a single disease with a cause, course and outcome. Inasmuch as he found many of his patients caught directly or indirectly in the meshes of sex problems of adolescence, he postulated a relationship between a disturbance in metabolism and the sex organs and their functions, making of it a disease that might strike anyone, not a disorder coming to life in persons with constitutional liabilities favoring its development. In his quest for nosologic perfection, however, he overlooked several important points, namely: That many people are

peculiar and queer under certain conditions, something not taken into account by his criteria for the disease; that many of those so unfortunate as to develop the disease do not progress all the way to a dementia; that his cause was very poorly defined; that the disease process is by no means a single affair; and, finally, that the disorder does not always come in adolescence but may occur later in life. Nevertheless his concepts gained wide circulation, became deeply ingrained in medical thought, and persist even today.

The next great rejuvenation of the nosologic viewpoint came with Bleuler. He postulated an organic disease having for its pathology a disturbance of the ameboid glia that led to a "gliosis." He very clearly set forth, however, the fact that the disease did not necessarily come on in adolescence, and did not always progress to dementia, some patients achieving relatively satisfactory adjustments in which they completed their span of life. Bleuler maintained that there was a "splitting" of mentation, or better, a disruption in the intrinsic cohesion of these performances; he nevertheless still clung to a unitary causality, and put more emphasis on disturbances of association and effect leading to an odd and strange behavior. He went beyond simple description, however, studying the process of mentation more and bringing forth primary, complex and accessory symptoms, thus enlarging upon Kraepelin's symptoms and giving more explanation as to their existence and meaning.

Dissatisfied with the foregoing concepts based too much on the medical fetish, nosology, Adolf Meyer saw the need for an entirely new orientation toward and formulation of these disorders; a formulation devoid of the strait-jacketing thinking based on the all too narrow concepts of Kraepelin and Bleuler. He chose to study these reactions from a biologic point of view based on the theory of integration, a theory that takes into consideration the fact that man functions as a totally integrated organism, and is, therefore, more than just a mind and body. He put less emphasis on the disease and more on the patient. Although a pathologist at the time, he began to realize the fact that careful and accurate histories of these patients provided material that seemed to indicate constitutional peculiarities and tendencies in the personality which, when played upon by crucial life experiences, came to be the symptoms and signs of these disorders. The constitutional make-up also seemed to facilitate disorganization, the result being the gradual deterioration of personal and social habits. In some cases, with the passage of time and a progressive deterioration of these habits, there were added to the picture not only changes in function, but also changes in form. The latter in some patients are structural

changes in the brain, to be sure, but varying in nature and without the specificity; rather more what is seen when the vital processes of self-sustenance and welfare are disordered or impaired; a part of and the results of the disordered functioning of the totally integrated personality. Thus Meyer looked upon these disorders not as a disease, but as a congeries of allied reactions featuring disturbances of the psychobiologic functions, and all that goes to make up the "he" (anatomy, physiology and psychology). Inasmuch as the "he" works as a whole, the picture is essentially one of twisted, odd behavior, determined by complexes and symbols, the meaning of many being understood only by a study of the individual's life experiences (inclusive of what is physical as well as what is mental). Thus the clinical picture is one of disordered formal behavior, motor functions, content, and effect, with disorganizing tendencies; a picture which, when taken in its entirety, is something strange to the wakeful life of a mature person and more nearly akin to the actions of man in an earlier stage of his evolution. For the reason that it is a twisted (para) performance of a totally integrated personality (ergasia), these reactions are referred to as parergasic reactions (sometimes schizophrenic reactions but not schizophrenia), a term denoting group of reactions having in common features that are odd and incongruous.

These reaction sets are based on the pragmatic principle of bringing the facts together into a descriptive-orientative grouping. They can become a diagnosis only when they have been accurately described and their setting clearly set forth so as to reveal their relationship and mode of operation, results and modifiability, and opportunities for help, regulation and prophecy. All this hangs together with cause and consequence in the manner of an experiment, the experiment, however, being a biologic one of nature in life and living. Meyer's concept then puts the burden on constitutional background and life experiences, at the same time letting what is functional be functional, what is structural be structural, what is antemortem pathology be those disturbances that died with the patient, and what is postmortem pathology be the more permanently fixed structural disturbances of the twisted functions of the totally integrated personality.

Such a formulation relieves one of the troublesome obsession of always looking for "something else" and overlooking what is at hand. It also leaves one open to anything that "will turn up" or "be found some day" through "new ultra instruments" or "undiscovered methods." It allows one to speak of process or lesion if such can be demonstrated and shown to bear a logical relationship in terms of scientific experiment and causality. It is a concept that demands first that the

case be individualized, approached openly, and studied in its own terms, devoid of the prognostic pessimism and therapeutic fatalism of obsolete concepts. This concept makes every patient unique and puts the physician to the task of first gathering all the facts and grouping them as to those that are genetic and those that are dynamic; and then carefully taking inventory of the patient's assets, liabilities, and the opportunities for help and treatment. Out of this emerges a planned therapeutic regime for that particular patient. Such a plan leads to a solution of problems and conflicts present; the amelioration of any harmful situation subject to change; the building and balancing of assets, and gradual but progressive attempts at adjustment; and where indicated, the utilization of the newer but accessory treatments that other members of the psychiatric staff will discuss. Such a therapeutic formulation rests to a large extent upon the physician's preparedness, interest, initiative and ingenuity.

Brief Resumé of the Older Methods of Treatment of the Schizophrenic Reactions (Dr. M. I. Tuchler): The schizophrenic reaction has been regarded as an apparently hopeless problem by many students of the disorder, yet spectacular spontaneous remissions and complete recoveries have been recorded, not only in those mild and fluctuating cases but also in major personality upsets. Since the direct causes of the disorder are not known in the sense of "cause and effect" and since the studies upon heredity, environment, previous psychotic episodes, and the nervous constitutional elements have served only to illustrate the complexity of the factors involved in the upset, the particular immediate, exciting causes of the disorder have been subject to critical study. Attempts have been made to utilize the knowledge thus gained to direct the therapy. The precipitating factors may be classified into the two general groups of: (1) the somatic (physical) and (2) the emotional (psychic).

The following is but a partial list of the immediate physical factors which have precipitated the schizophrenic reaction: Accompanying physical shock, accidents, trauma; exhaustion states, operations; accompanying hemorrhage, hepatorenal disease, endocrine disturbances, metabolic diseases, atrophy of the choroid plexus and numerous infectious diseases.

A recognition of the physical and somatic factor under which the schizophrenic reaction has emerged is essential for a proper evaluation of the nature of the disorder, its prognosis, and for the establishment of logical therapy.

In addition to the somatic factors, the psychic or emotional components which preceded and formed the setting for the disorder must be carefully evaluated. These include, in part: Mental and emotional shocks and trauma; serious finan-

cial, or related reversals; desertion, seduction, and similar emotional experiences; disturbed social, familial and parental relations; distortions of infantile and adolescent development, and the stress and strain of everyday activities of life at work, at school, or at college. Frequently, also, the psychosis appears without known somatic or psychic factors.

Since the factors which precipitate the schizophrenic reaction are so extremely variable and the constitutional factors so complex, a unity cannot be expected in a simple etiologic formulation, and therapy must therefore be guided by an understanding of the particular case itself. Diethelm has stated that the therapy and "prognosis depend upon the type of the schizophrenic reaction, the personality of the individual, the setting, and the resources available Nothing definite is known about the structural changes in the brain, or possible etiological somatic factors; the treatment must deal, therefore, primarily with personality functions."

Certain varieties of the disorder which are included under the term "schizophrenia" carry favorable prognoses. Recovery may be either spontaneous or follow simple routine medical supervision. The patient who develops an acute or fluctuating contact with reality following some major emotional shock frequently has an excellent prognosis. Those cases in which catatonic features stand in the forefront carry an extremely favorable prognosis. The maintenance and development of insight are also regarded as favorable signs. The case which is slow in development is much more unfavorable from the prognostic and therapeutic point of view. The silly, superficial reaction considered as hebephrenic, and the simple types of disorder have poor prognoses, with remissions and recurrence. The schizophrenic disorder which develops in the feeble-minded carries a very poor prognosis. Variations which feature dominant paranoid trends frequently become stationary after the development of a delusory system which satisfies the immediate needs of the patient. So irregular, however, are the predictions, that those experienced in the mental disorders rarely prognosticate. The individuality of the psychosis for each patient cannot be overstressed and like the variations in personality of normal individuals, the variability and individuality of the personality of the schizophrenic patient must be taken into consideration in diagnosis, prognosis, and therapy. The intellectual and educational resources of the individual also determine the type of therapy to be employed.

The following measures have been employed in the treatment of the schizophrenic reaction during the past fifteen years: Endocrine therapy, both surgical and medical; organotherapy; produc-

tion of a high-grade anemia; autohemotherapy of all varieties; chemotherapy including the metabolic or respiratory stimulants and narcosis; foreign protein shock; pyrotherapy, and many incidental therapeutic procedures. The simpler psychotherapeutic procedures are directed toward the creation and maintenance of a wholesome environment with adequate nursing and supervisory facilities, good food, attention to sleep, exercise, with the addition of the following procedures as the condition of the patient justifies: (1) Hydrotherapy, massage, specific and symptomatic medical and surgical care, occupational and recreational therapy; (2) a study of the emotional and social surrounding and precipitating factors which preceded the acute schizophrenic upset, (these studies have afforded a fair degree of readjustment to some patients who are able to learn by retrospective desensitization and re-education); (3) psychoanalytical and other related forms of therapy have given results in a small number of cases.

The particular therapeutic procedures employed depend upon the psychiatrist's own conception of schizophrenia. If the psychiatrist thinks that "once a schizophrenic, always a schizophrenic", therapy will assume the form of routine care and supervised neglect. In those patients who are difficult to approach, the negativistic and catatonic schizophrenic, psychotherapeutic methods are of little avail while the patient is withdrawn from apparent contact with his environment, and in this situation, the use of intravenous sodium amytal, of carbon dioxide inhalations, of ether-carbon dioxide mixtures, of alcoholic intoxication have been found useful.

General Remarks on Insulin Hypoglycemia in the Treatment of the Schizophrenic Reactions (Dr. L. A. Golden): The preceding speakers have adequately described the schizophrenic reaction, as well as the methods of treatment used prior to the introduction of insulin and metrazol. The insulin shock therapy aroused greater interest than the metrazol therapy at first, because it was brought to our attention more forcibly. It is assumed that most of you are familiar with the principles of the actual treatment, which briefly consists of repeated severe hypoglycemic reactions induced by the administration of large doses of insulin to patients with schizophrenia. Sakel of Vienna first noted the changes in personality produced by insulin during treatment of acute withdrawal symptoms in morphine addicts. He subsequently, with the aid of Plotzl, and also Dussik, treated schizophrenics with such insulin shock. His first series of cases was reported in 1934, and of his group, numbering 104 patients, 70 to 80 per cent acquired remissions, estimated as an apparent cure. The method rapidly spread in Europe, and rather tardily reached this country in about 1936.

At that time the only other large series of cases was that of Muller of Switzerland, who reported 114 cases, with approximately the same high remission rate. American and English physicians visiting in Vienna at that time had an opportunity of investigating these claims, and focused our attention on this new psychiatric activity. Since then the literature has been flooded with reports from clinics throughout the world on their experiences with insulin hypoglycemia in the treatment of schizophrenia.

Sakel was induced to train a group of physicians in the technic of insulin therapy at the Harlem Valley State Hospital, and the treatment was then instituted throughout the state mental hospital system of New York. The cases in these hospitals were, of course, mostly chronic, and were not expected to show as good results as the cases of shorter duration treated by the European physicians. During my stay at the Harlem Valley Hospital I became intimately acquainted with some thirty of the sixty patients treated there. At that time, approximately 55 per cent of such patients had been sent home on probation as apparently recovered. In this group the duration of illness had been from one to thirteen years. The prognosis in most of these cases before treatment was considered poor. About 25 per cent of the patients (remaining in the institution) were improved so that instead of sitting about, being fed, being kept clean, were then able to care for themselves, to read, to work in the yard, and were in addition free of most of their psychotic symptoms, although they still lacked good insight. About 20 per cent failed to show any improvement.

In evaluating the results of insulin therapy in both acute and chronic schizophrenics, one must consider the number of remissions reported in such groups prior to the introduction of this therapy. In patients ill less than one year, the spontaneous remission rate has been variously given as ranging between 2 to 35 per cent, as judged from the literature. In our better modern psychiatric hospitals, where a sufficient number of trained psychiatrists are available, the remission rate is probably between 50 and 60 per cent. Unfortunately, a sufficient number of insulin-treated cases has not been reported for statistical use. The spontaneous remission rate for chronic schizophrenia is reported to be between 5 and 10 per cent. It is possible that it may be slightly higher where a sufficient amount of psychiatric attention can be given to the patients. If we contrast the reported remission rates in both acute and chronic schizophrenia treated by insulin therapy with the above figures, it seems quite likely that the new therapy is definitely superior in its effect. Recently I made an attempt at a statistical evaluation of all cases treated with insulin by the various clinics in Austria, Switzer-

land, Poland, England, Scotland, Australia and America. Broadly speaking, the results for the most part were quite encouraging. Of about 1100 cases that I could collect from the literature, apparent recovery was reported in approximately 50 per cent, while an additional 20 per cent had improved. I discarded this statistical effort, however, because of several obvious defects. These were chiefly failure of standardization in reporting the duration of illness, the criteria used in the determination of the result, and the modification of treatment used. Recently Frostig has suggested a form that will lead to standardized recording of such treatment. If this is universally adopted, I believe that in a few years we shall have some adequate statistics for the evaluation of this type of therapy. The reports of individual clinics, however, are for the most part quite optimistic, except for a few originating in Poland.

The physiologic changes occurring during this treatment are being studied intensively. Investigation has already revealed that there are many complex physiologic alterations, such as a marked diminution of oxygen utilization in the brain, changes in the blood pressure, and changes reflected in the electrocardiogram, and in the encephalogram. Many experiments are being carried out on animals to determine the effect of such reported shocks on the central nervous system.

The clinical neurologic involvement has been of especial interest to me. During prolonged hypoglycemic shock, the patients show a bewildering array of neurologic changes. There are alterations of tone, posture, movement, and even convulsive phenomena, transient paralyses, signs of mid-brain, basal ganglia, and medullary involvement. Both Von Angyal and I concluded that during hypoglycemic shock, the brain is involved from the frontal part backward in a manner apparently related to the phylogenetic origin of the central nervous system.

It is my belief that the central nervous system must be studied both clinically and experimentally during such therapy to determine its role in the insulin treatment of schizophrenia. Several important questions still remain unanswered. They are: What is schizophrenia; how does insulin therapy affect the mental disorder; and how permanent are these apparent cures? Perhaps the recent union of psychiatrists, physiologists, biochemists and pharmacologists for the study of insulin therapy in the schizophrenic patient may ultimately answer these questions.

The Use of Metrazol in the Treatment of Schizophrenic Reactions (Dr. G. A. Goldsmith): The method of treating schizophrenic reactions by the induction of convulsive seizures was introduced by von Meduna, the results in his first series of cases being reported in 1935. Originally

camphor was used as the convulsant drug; later pentamethylene tetrazol (metrazol) was used. The rationale for this procedure rests on the hypothesis that there is a biologic antagonism between epilepsy and schizophrenia.

The method consists in the intravenous injection of a 10 per cent solution of metrazol, the initial dose selected being 5 c.c. If a seizure does not occur the dose is increased by 1 c.c. daily until the desired reaction ensues or additional metrazol may be given at once, or at the end of thirty minutes. Fifteen cubic centimeters have been given without untoward results. As long as a paroxysm follows, the dose is kept constant. Injections are given every second day to twice weekly and a series of fifteen or twenty grand mal seizures are induced even in individuals who show no tendency to improve. At least three attacks should be provoked after a remission has been established. Within ten to fifteen seconds after the injection of metrazol a grand or petit mal attack occurs. The major convulsion is usually initiated by an aura followed by a cough or a cry, a facial expression of bewilderment and a few wild movements of the arms and legs. The tonic phase begins with opening of the jaws followed by tonic contraction of the trunk and extremities which lasts ten to fifteen seconds. The clonic stage follows and is of thirty to forty-five seconds duration. There may be conjugate deviation of the eyes, marked dilation of the pupils, which are unresponsive to light, a positive Babinski reflex, involuntary urination and salivation. During the tonic phase there is flushing of the face, chest and abdomen, during the clonic stage cyanosis and pallor followed by a short period of apnea. A pilomotor reaction and sweating may occur. After the seizure the patient may sleep, exhibit severe confusion, or show extreme restlessness for several hours. The first convulsion sets the pattern for subsequent paroxysms.

Complications include dislocation of the jaw or shoulder, nausea and vomiting, a transitory tachycardia, fever, and rarely a fracture of the humerus. There have been two fatalities attributable to metrazol, both due to pulmonary embolism. The mortality is about 0.3 per cent. Care should be used in selecting patients for treatment. The individual should be young and in good physical condition. Contraindications are acute illness, evidence of cardiovascular disease, menstruation, a history of head trauma followed by unconsciousness, and any abnormal laboratory findings indicative of diabetes, syphilis, renal disease and anemia.

Results of treatment with metrazol as reported in the literature show that of 503 schizophrenic patients who had been ill from a month to over five years, 243 individuals, or 48 per cent, showed marked improvement usually designated complete

remission. When the schizophrenic reaction was of less than six months' duration, the remission rate averaged about 80 per cent; when less than a year's duration, 44 to 75 per cent. When over a year had elapsed since the onset of the schizophrenic process, the chance of remission dropped to 11 to 26 per cent. Almost no remissions occur if schizophrenia has been present for over four years. The stuporous and catatonic forms of the disorder show the best response. A number of relapses have occurred, an observation which has shaken the original optimism of some observers. An attempt to evaluate the results by comparison with the spontaneous remission rate led to no definite conclusion. The percentage given by different authors for spontaneous remission varies from 2 to 35 per cent. There are no definitely accepted criteria for designating complete or partial remissions and no comparable series of patients is available except that reported by Low et al. He found 25 per cent remission in a series of "functional psychosis" in 1935, and a 53.8 per cent recovery in 1937 in a similar group of patients treated with the new methods of therapy.

Physiologic and biochemical changes which occur during and following the convulsive seizure are being investigated. There is a marked reduction in the oxygen content of the blood early in and persisting throughout the paroxysm. Prior to the tonic phase, in rabbits Selbach noted a contraction of the blood vessels of the ear and retina. There was an increase in pH of the blood during and a decrease after an attack. Low and his co-workers report a decrease in the pH, CO_2 , and calcium content after a seizure with a rise of blood sugar. Meduna found an increase in the acidity, ammonia and phosphate content of the urine with a decrease in chlorides following a convulsion. The blood pressure rises to nearly 200 after a seizure, remains somewhat elevated during the first hour, and reaches normal after two hours. The pulse behaves similarly.

Theoretical consideration of the cause of the beneficial effects of convulsive therapy has emphasized two findings: The anoxemia, and the marked stimulation of the sympathetic nervous system. It has been shown that cerebral anoxemia causes an increase in impulse firing by cerebral tissues (Holmes-Davis). Gellhorn believes that insulin, metrazol, narcosis, and the inhalation of CO_2 , all of which have been used in the treatment of schizophrenic reactions, have a similar action on the central nervous system. They produce by a profound alteration in metabolism a stimulation of the sympathetic nervous system, thereby bringing about a reorganization of all mental processes. Friedman suggests that the marked changes occurring in the vascular bed and in the nutritional supply to the cerebral cells may cause enough change in the metabolic equilibrium to reverse

whatever tendency there is to schizophrenia. The stimulation of the vegetative nervous system involves vital processes, and every available defense mechanism is brought into play.

Comparison of therapy with metrazol and insulin shows the former to be advantageous because of the ease of administration, the reliability and speed of the response, and the lack of need for an elaborate set-up or personnel. The mortality is less with metrazol than with insulin. There is some evidence that the two procedures are valuable in different types of cases. Combined therapy or rotation of these two new methods may be helpful at times.

The treatment of schizophrenic reactions with metrazol is still in the experimental stage, is not without danger, and should be used only in selected patients, under carefully controlled conditions. A period of years will be necessary before results can be accurately evaluated, but a hopeful prognosis seems possible in this previously depressing field of therapeutics. There are numerous opportunities for future research and the combined efforts of the biochemist, physiologist, and psychiatrist should yield valuable information, leading to a better understanding of cerebral metabolism and of the schizophrenic process.

SHREVEPORT CHARITY HOSPITAL

A meeting of the staff was called to order on April 19, 1938, at 6:45 p. m. by Dr. J. P. Sanders. Minutes of the previous meeting were read and approved.

SCIENTIFIC PROGRAM

A series of eye, ear, nose and throat cases were presented by Dr. J. A. Wilkinson.

Diabetic cataract: White female, aged 16, diabetes discovered at 11 years of age upon previous hospitalization. Cataract began at 12 years of age; vision became so poor that one eye was operated on in 1933, and the other eye was operated on in 1934, the needling type of operation being performed in both instances. Vision good with the aid of glasses. Blood sugar was reduced to 145 and maintained by proper diet and the use of insulin. In the past few months vision has become poor again, examination revealing post-cataract membranes of both eyes. In addition the patient has become insulin fast and has been changed to protamine insulin. Dr. Boaz, the narrator, discussed the process of occurrence of cataract in diabetics, pointing out the obscurity of the process.

Tuberculosis cutis orificialis: Negro, male, aged 22. Onset spring of 1937 as small vesicles appearing on upper lip and about the orifices of both nostrils. Vesicles ruptured exuding a clear fluid, and seemingly other vesicles appeared at each point of contact with the fluid. Lesions pro-

gressed until now they involve the entire upper lid, and distal half of the nose, and the roof of the mouth. The lesions are now crusted and painful with considerable swelling of the upper lip and nose. Contributory past history: draining right ear for one of two months before onset of the lesion; an uncle died from tuberculosis. Temperature practically normal throughout hospitalization. Physical examination negative except for lesions described, destruction of right ear drum, lymphadenitis at angle of mandible and over entire body. Kahn test negative; urine negative, white blood cells 5,400; 81 per cent segmented, 26 per cent lymphocytes, 12.6 gm. hemoglobin. Scrapings from lesion negative for fungi. Tuberculin reaction positive; biopsy of nose, consistent with tuberculosis; smears from lesions negative for acid fast organisms. Roentgen ray revealed normal lung fields. Treatment: Neoarsphenamine, potassium iodide, and ultra-violet light.

Discussion was by Drs. P. C. Worley and W. H. Browning.

Pulsating exophthalmos: Case record presented by Dr. Jones. White male, aged 32, struck on the jaw by a piece of timber one year ago, causing fracture of base of skull, with a resulting arteriovenous aneurysm between the left internal carotid artery and the cavernous sinus. The pulsating exophthalmos made its appearance approximately two months after the injury. Treatment: following the wearing of a compression collar, the patient's ability to withstand pressure on the common carotid artery being good, ligation of the common carotid was accomplished. Results: considerable reduction of the exophthalmos, pulsating and roaring no longer perceptible by the patient, bruit detectable with the stethoscope. Further ligation may be resorted to if failing vision would so indicate.

Discussion of the case was by Drs. Sanderson and Abramson.

Corneal ulcers, bilateral: Case presented by Dr. L. J. Gray, was that of a white female, aged about 5 years. Child was markedly undernourished. Treatment: restoring correct nutrition, clearing up foci, eye at rest with bandage, hot packs, atropine, and instillation of an antiseptic and administration of foreign proteins.

Plastic surgery of eyelids: Case presented by Dr. H. L. Gardiner was that of an adult negro male. Patient, while in an epileptic seizure, fell into a pot of scalding water, with the resultant scarring of the face, giving bilateral ectropion and the inability to close his eyes. Treatment: loosening of scar tissue and grafting of skin about both eyelids. Results: moderate improvement. This case was discussed by Dr. L. J. Gray.

Presentation of unusual cases in Hospital: Dr. H. A. McConnell presented the surgical specimens of the left ovary, left tube, uterus, and cervix re-

moved from the case of hermaphroditism presented at the last staff meeting.

William M. Hall, M. D., Sec.

HIGHLAND SANITARIUM

The staff of the Highland Sanitarium held its monthly meeting on April 21, 1938, in the Clinic Building, following dinner at 7:00 p. m.

SCIENTIFIC PROGRAM

Dr. P. W. Winder, in the absence of Dr. H. A. McConnell, presented a case of true hermaphroditism. The patient, aged 16 years, was admitted to Charity Hospital with an attack of right lower quadrant pain. Examination revealed a normal appearing colored boy of 16 years, except for marked hypertrophy of breast, the absence of a left testicle, and hypospadias. An appendectomy was done, and at the time of operation, it was found that the patient had a normal size uterus, a left ovary, tube and round ligament. After convalescence from the appendectomy, it was decided that the uterus, ovary and tube should be removed, a panhysterectomy and left salpingo-oophorectomy being done 16 days ago. The specimen was present in toto, together with the photograph of the specimen at the time of operation. Discussion was opened by Dr. Mays, followed by Dr. Duncan, closed by Dr. Winder.

Dr. George Wolfe then discussed the highlights of the recent meeting of the American College of Physicians. Some of the papers mentioned by Dr. Wolfe were:

A paper by Dr. Blake, of Yale, on the efficacy of the various brands of scarlet fever antitoxin. Dr. Blake concluded that some brands required larger doses than were advised by the various pharmaceutical houses; a paper by Dr. Kolmer reviewing prophylaxis of poliomyelitis; a paper by Dr. Goldblock, of Cleveland, Ohio, reporting experimental work on essential hypertension; a paper by Dr. Robert Cooke, of New York, on allergy.

Dr. Wolfe also spoke about the clinic on blood diseases. Discussion was opened by Dr. Rutledge,

followed by Dr. Baker, Dr. Duncan and closed by Dr. Wolfe.

P. W. Winder, M. D., Sec.

NORTH LOUISIANA SANITARIUM

Following dinner, the regular meeting of the North Louisiana Staff was called to order by the President on March 22, 1938, at 7:50 p. m., with twenty members present.

There were no committee reports, no communications and no unfinished business. Dr. Gowen announced the appointment of the following committees:

Surgical Committee: O. C. Rigby, Chairman; J. R. Stamper, J. T. Crebbin.

Medical Committee: J. M. Gorton, Chairman; S. G. Wolfe, C. E. Boyd.

Records Committee: C. R. Mays, C. R. Reed, E. C. Edwards.

Laboratory Committee: Geo. Dickson, A. P. Crain, Ralph Riggs.

Training School Committee: C. R. Gowen, Ex-Officio Chairman; A. A. Herold, Sanitarium; Miss G. Peters, Supervisors; Mrs. C. S. Baggett, Alumni; W. B. Heidorn, Staff.

Under new business, Dr. Herold explained that the hospital had been fortunate in obtaining the services of Dr. Mathews as hospital pathologist. It was pointed out that, in order to maintain recognition by the American Medical Association and the American College of Surgeons, all specimens of tissues removed at operation would have to be examined grossly and microscopically by an accredited regular hospital pathologist. This was discussed by Drs. Rigby and Abramson.

Dr. Herold announced that the Hospital Association had agreed to discontinue discounts to families of railroad employees. City police and firemen were to continue to get 25 per cent discount on themselves only; this was agreed upon at a recent meeting of the Hospital Council.

Following the reading of the hospital report and the discussion of the deaths, the Scientific Program was begun.

Drs. Heard and Gowen presented an experimental moving picture of a thoracoplasty.

N. Judson Bender, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

JUNE 1. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

JUNE 1. Mercy Hospital Staff, 8 p. m.

JUNE 1. Hutchinson Memorial Clinic Staff, 8 p. m.

JUNE 2. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JUNE 6. Board of Directors, Orleans Parish Medical Society, 8 p. m.

JUNE 6. Pathologic Conference, Hotel Dien, 8:15 p. m.

JUNE 7. Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.

JUNE 8. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

JUNE 8. Touro Infirmary Staff, 8 p. m.

JUNE 10. French Hospital Staff, 8 p. m.

JUNE 13. ORLEANS PARISH MEDICAL SOCIETY. Joint Clinical Meeting at United States Marine Hospital, 8 p. m.

JUNE 15. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

JUNE 15. Charity Hospital Surgical Staff, 8 p. m.

JUNE 16. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JUNE 16. Eye, Ear, Nose and Throat Club, 8 p. m.

JUNE 17. I. C. R. R. Hospital Staff, 12 noon.

JUNE 17. New Orleans Dispensary Staff, 8 p. m.

JUNE 20. Hotel Dieu Staff, 8 p. m.

JUNE 21. Charity Hospital Medical Staff, 8 p. m.

JUNE 22. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

JUNE 23. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JUNE 27. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m.

JUNE 28. Baptist Hospital Staff, 8 p. m.

JUNE 29. Clinical Pathological Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

JUNE 30. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of May the Society held two regular scientific meetings. Programs were presented as follows:

Monday, May 9

Banana and Banana Powder Therapy in Diarrheal Diseases of Infants and Young Children

By:.....Dr. Edwin A. Socola

Discussed by Dr. M. D. Sterbcow and closed by Dr. Socola.

Ruptured Intervertebral Disc as a Cause of Sciatic Pain

By:.....Dr. Dean H. Echols

Discussed by Drs. L. L. Cazenavette, E. D. Fenner and closed by Dr. Echols.

The Treatment of Tularemia

By:.....Dr. Leo N. Elson

Discussed by Dr. George H. Upton and closed by Dr. Elson.

Monday, May 23

Gas Bacillus Infection with Special Reference to the Therapeutic Value of the Roentgen Ray.

By:.....Drs. L. Sidney Charbonnet, Jr. and Robert W. Cooper.

Discussed by Drs. I. M. Gage, Howard R. Mahorner, George Fasting, and closed by Dr. Charbonnet.

Postural Defects in Elementary School Children

By:.....Dr. Guy A. Caldwell

Discussed by Drs. Emile Naef, Paul McIlhenny, Bela Halpert, Emile Bertucci, and closed by Dr. Caldwell.

Further Observations on the Serum Volume Test for the Hemorrhagic Diathesis in Jaundice

By:.....Dr. Frederick F. Boyce

Discussed by Drs. George M. Decherd, I. M. Gage, Leo N. Elson, and closed by Dr. Boyce.

The following recommendations of the Publicity Committee were adopted at this meeting:

1. That the radio program of the Orleans Parish Medical Society and the cancer committee in the Parish of Orleans be continued.

2. That these radio programs be announced in the newspaper radio calendar as: "Medical Programs", or "Medical Hour" without the appearance of the name of the speaker as has been done by the Society's radio committee in the past.

3. That radio talks be announced to the audience as "a presentation on medical education sponsored by the (name of committee, organization, school or university), and is presented by a member of (said committee, organization, school or university).

4. That "set" or prepared medical articles may be published in the lay press by members of the Orleans Parish Medical Society provided they (the articles) have received the approval of the Society, and provided further that these articles are signed not by the writer but as follows: "A Member of the Orleans Parish Medical Society", or "Released by the Orleans Parish Medical Society."

The Legislative Committee met to discuss bills coming before this session of the State Legislature pertaining to the medical profession.

The following doctors were elected to membership in the Society:

Active: Drs. Joseph Ciolino, Marie Stanbery, and Georgianna von Langermann.

Associate: Dr. Frank L. Ramsay.

I regret to report the death of Dr. Caroline Mims.

At the annual staff dinner of the Baptist Hospital, April 26, at Arnaud's the following new officers were installed: Dr. H. B. Alsobrook, chairman; Dr. E. Z. Browne, vice-chairman; Dr. John

T. O'Ferrall, chairman of executive committee; Dr. J. Kelly Stone, secretary, and Dr. W. Robyn Hardy, treasurer.

Dr. Gilbert C. Anderson is president and Dr. Lewis Golden, secretary of the newly organized New Orleans Society for Neurology and Psychiatry. Among the members are Drs. C. G. Cole, L. L. Cazenavette, Edmund Connely, Dean H. Echols, Grace Goldsmith, Frederick L. Fenno, Joseph O'Hara, Walter J. Otis, Lucy Scott Hill, Charles Holbrook, G. F. Roeling, T. A. Watters, H. R. Unsworth and Erwin Wexberg.

Dr. B. I. Burns attended the meeting of the Association of Anatomists in Pittsburgh, April 14-16.

Dr. Don Julian Graubarth attended the Alabama State Pediatric Society meeting at Mobile, April 18.

Dr. Francis E. LeJeune spoke on "Hoarseness" before the Mississippi State Medical Association convention, April 20.

Dr. T. A. Watters spoke before the American Association of Collegiate Registrars on April 21 on the causes of maladjustments of students in colleges and universities.

At the conference of the Louisiana Parent-Teachers' Association, April 22, Dr. Charles Bahn, Dr. Shirley C. Lyons, and Dr. W. H. Perkins were among the guest speakers.

On April 24, Dr. Fred Fenno talked at Camp Salmen, at an institute for camp counselors which was held under the auspices of the Council of Social Agencies.

Dr. Robert A. Strong, who holds a Commission of Lieutenant Colonel, Medical Corps, Arms and Service Assignment Group of the U. S. Army, gave an illustrated lecture on "Aviation Medicine" to the army officers in New Orleans and vicinity, at the Officers Club, Jackson Barracks, April 24.

Dr. H. L. Kearney attended the meeting of the Triological Society at Atlantic City, April 27-29.

Dr. Rawley M. Penick, Jr., attended the meeting of the Surgical Society in St. Louis and the meeting of the Southern Society of Clinical Surgeons in Montreal, during the last week of April.

Dr. Edgar Hull and Dr. B. R. Heninger have been certified by the American Board of Internal Medicine.

Dr. A. C. Broussard was elected president of the Louisiana State Dental Society at its annual convention in Alexandria, April 30.

Dr. Francis E. Le Jeune was elected president of the Louisiana-Mississippi Ophthalmological and Otolaryngological Society, April 30. Dr. W. B. Clark and Dr. Henry N. Blum were named as Louisiana councillors.

At the meeting of the American College of Physicians in April, Dr. J. O. Weilbaeher, Jr., was made an associate and Dr. G. M. Decherd, Jr. a fellow of the association.

Dr. Urban Maes attended the meeting of Clinical Surgery in Chicago, April 29 and 30, and the American Surgical Association meeting in Atlantic City, May 2-4.

Members taking part in the annual convention of the Louisiana State Pediatric Society, May 2, were Drs. Ruth Aleman, Philip C. DeVerges, Sims A. Chapman, Roy E. de la Houssaye, Julian Graubarth, Suzanne Schaefer, and Charles Williams.

Dr. William D. Phillips was elected vice-president and Dr. H. B. Alsobrook, secretary-treasurer of the Louisiana State Gynecological and Obstetrical Society, May 2.

Dr. C. Grenes Cole was re-elected president of the Louisiana State Coroners' Association, May 3.

Dr. Ruth Aleman was named president and Dr. Philip C. De Verges, secretary-treasurer of the Louisiana State Pediatric Society.

Dr. A. J. Hockett was elected president of the Louisiana State Hospital Association at its meeting May 3.

Dr. George A. Mayer represented the Tulane University School of Medicine at a five-day meeting of the International Congress of Gynecologists and Obstetricians held in Amsterdam, May 4-8.

On May 4, Dr. E. C. Faust addressed the Mobile Association of Science on "Malaria with Reference to its Epidemiology, Geographical Distribution and Prevention in the Southern United States."

The Loyola chapter of Theta Beta, conferred honorary membership upon Dr. James T. Nix at its annual banquet, May 9.

Dr. H. L. Kearney attended the meeting in Monroe, May 6-7, of the Louisiana Academy of Science of which he is president.

Dr. Neal Owens attended the Florida State Meeting, May 8-9, in Pensacola.

Dr. Robert A. Strong was a guest speaker at the seventy-second annual session of the State Medical Association of Texas, Galveston, May 10-12. He spoke on "Preventive Pediatrics," "The Immunizations," and "The Most Frequent Causes of Vomiting in Infancy."

Dr. Roy de la Houssaye was elected president, and Dr. E. A. Socola vice-president of the New Orleans Milk Commission. The following Society members were elected to the board of directors: Drs. Ruth Aleman, Elizabeth Bass, Charles J. Bloom, Philip C. De Verges, L. R. De Buys, Julian Graubarth, John Lanford, Edwin H. Lawson, W. C. Rivenbark, Carroll Smithers, Jack E. Strange, Suzanne Schaefer, John Signorelli, Haidee Weeks.

Dr. Alton Ochsner left May 11 to give a series of lectures in Honolulu.

The second annual convention of the Louisiana Mental Hygiene Society of which Dr. Joseph A. O'Hara is president, met here May 13. Dr. W. H. Perkins presided and addresses were made by Drs. Lewis Golden, T. A. Watters and Erwin Wexberg.

Members of the Society on the program of the Society for Experimental Biology and Medicine, May 13, were: Drs. C. C. Bass, Joseph S. D'Antoni,

William H. Harris, Bela Halpert, J. R. Schenken and J. Ross Veal.

Dr. James T. Nix recently visited the Cancer Memorial Hospital, The University of Pennsylvania and Columbia University to study graduate training methods.

REMOVALS

Dr. Henry G. Butker from 1234 to 1201 Canal Bank Building.

Dr. E. A. Ficklen from 647 to 616 Canal Bank Building.

Dr. M. M. Goldberg from 715 Pere Marquette Building to 2701 Peniston Street.

Dr. Samuel Karlin from 1520 Aline Street to 519 Physicians and Surgeons Building.

Dr. John F. Oakley from 1234 to 1201 Canal Bank Building.

Dr. C. V. Perrier from 1234 to 1201 Canal Bank Building.

Dr. Fred K. Vaughan is now located at 203 Medical Arts Building.

TREASURER'S REPORT

Actual book balance March 31, 1938:.....	\$4,852.86
April credits:.....	\$1,183.74
Total credits.....	\$6,036.60
April expenditures:.....	\$1,009.91

Actual book balance April 30, 1938:.....\$5,026.69

Gilbert C. Anderson, M. D.,

Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

REPORTS PRESENTED AT THE ANNUAL MEETING OF THE STATE SOCIETY, NEW ORLEANS, 1938

REPORT OF THE PRESIDENT

It is my duty and pleasure to transmit to you herewith the President's annual report on the state of the Society, together with some comments and recommendations.

I am gratified to be able to report that there has been no dissension within our ranks during my tenure of office and that the affairs of the Society have been handled in the normal routine manner.

The profession is fortunate in having been furnished "Refresher Courses" in pediatrics this year as was done last year in obstetrics. The funds for these lectures have been furnished by the Louisiana State Board of Health from monies appropriated to the state through the Social Security Act. We are grateful to Doctors Todd and Masterson for their assistance in cooperating with our

Committee on Medical Education in planning for these lectures. I feel that a word of commendation should be said for the pediatricians who were willing to leave their work to do this teaching. I suggest the Secretary be instructed to write Dr. O'Hara expressing our appreciation.

It is generally recognized, I believe, that we have been crowding too much into three days at our Annual Meeting. With so many things to do and so little time in which to do them, we are failing to make personal contacts, which in my opinion, are of much value. I recommend that we revert to the old custom of devoting four days to the Annual Meeting.

If the State Society is to render the best service to the profession and a service that, in my opinion, is very much needed, a movement should be initiated looking toward the provision of a full-time secretary. So many matters of importance are coming up almost daily, that it is impossible for a

busy doctor to give them the necessary attention. In view of the fact that it will probably be necessary to raise the dues to ten dollars a year, I realize that the matter should be given careful consideration. It might be well to get the opinion of the various Component Societies but that is a matter which I shall leave to the judgment and wisdom of the House of Delegates to work out.

In September, 1937, I received a letter from the Shreveport Medical Society, together with a set of resolutions that had been mailed to the Governor, protesting his action in not having named some representative of the Louisiana State Medical Society on the newly appointed Hospital Board. They requested that the State Society also take some action. The matter appeared to me to be of such importance that a meeting of the Executive Committee was held in New Orleans on October 2, 1937. At this meeting the Committee authorized similar resolutions to be sent to the Governor, and the President was instructed to appoint a committee to confer with the Governor and discuss with him the whole subject of new charity hospitals and charity beds in hospitals already existing.

It was necessary for the Committee to collect certain data to present to the Governor, which consumed some time and I was advised on November 6 that the Committee was ready to go to Baton Rouge. On that date I telephoned the Governor's secretary asking him to arrange a conference at the Governor's convenience and stated that if it were possible we should like to have this done before November 30 as most of us wished to attend the Southern Medical Association meeting. The secretary advised that he would present the matter to the Governor when he returned to his office and would advise me. Nothing was heard from the Governor and when I was in New Orleans at the Southern Medical Association meeting, I learned that Mr. Johnson would be out of the state for about two weeks and as it seemed advisable, if possible, to have him at the meeting and the Christmas Holidays were approaching, I concluded to make no further effort to contact the Governor until after January 1. In the meantime, on December 28, Mr. Johnson gave to the press a list of names of doctors whom he stated would constitute an Advisory Committee to the Hospital Board on technical matters. The only reaction on the part of the Governor was an acknowledgment of the receipt of the resolution. The matter is still pending and I shall present a supplementary report to this section.

I have had the pleasure of visiting practically every District Society at least once and some of them more than once. It is to be hoped that these visits will have the effect of bringing the Component Societies into closer contact with the

State Society. The courtesies and splendid hospitality shown me have left me with very pleasant memories.

I should be derelict in my duty if I failed to mention the efficiency with which the office of the Secretary-Treasurer is conducted. The personnel has always been most courteous and helpful and I wish to express my sincere appreciation to Dr. P. T. Talbot and his assistants Misses Annie Mae Shoemaker and Odile Simpson.

My relations with the Executive Committee and with the membership at large have been most happy.

RECOMMENDATIONS

1. Instruct Secretary to write to Dr. O'Hara expressing appreciation for cooperation in courses in pediatrics conducted in the state.
2. Revert to old custom of devoting four days to Annual Meeting.
3. Consideration of question of full-time secretary.

Respectfully submitted,
Charles M. Horton, M. D., President.

REPORT OF SECRETARY-TREASURER

Herewith please find report of the Secretary-Treasurer's office for the past year.

1937 ANNUAL MEETING

At the Annual Meeting in Monroe in 1937 we had the following registration:

Members	364
Guests	30
Exhibitors	30
Woman's Auxiliary—Members.....	110
Guests	25
	135
Total	559

I believe that all will agree that this was one of the most successful and pleasant meetings in the history of our State Society. A great deal of this was due to the untiring efforts of Dr. D. T. Milam as General Chairman of the Committee on Arrangements and the cooperation and support of the other doctors in Ouachita Parish.

MEMBERSHIP

For the past year our membership was as follows:

Active Members.....	1,316
Honorary Members.....	3
Intern Members.....	28
Members at large.....	1
Total	1,348

You will note from the above that our total membership was 1,348 in 1937. The total membership in 1936 was 1,321 which shows that we had an increase of 27 members in 1937. Our enroll-

ment, up to date of this writing, for 1938 is 1,049 as compared to 1,007 on the same date in 1937.

It is very gratifying to be able to report not only an increase in membership but also an evidence of increased interest throughout the profession in the state. Obviously this status should be maintained for as you all well know there are many problems which confront the medical profession just at present. A great many of our medical prognosticators state that socialized medicine is just around the corner. It is my hope that this may be as erroneous as the prediction of our illustrious former President Hoover's statement in 1929, when he stated that prosperity was just around the corner. Never in the history of our organization should there be such effort to maintain a fortified and cooperative profession to ward off, if possible, the encroachment of this disagreeable feature of the practice of medicine, as there is now. In this regard it is very interesting to report that the recent action of the American Medical Association toward obtaining from the various states a survey of the present medical status and needs for the future is an effort to counteract any advent of socialized medicine. Their plan has been recommended by our Committee on Medical Economics and is up for discussion by the executive officers and no doubt will be given due consideration by the House of Delegates. This is a momentous problem and should be adequately solved as early as is consistent in order that the medical profession of Louisiana may be properly protected.

FINANCES

It is very gratifying to report that during the year 1937 our financial status was maintained in an excellent condition. Our actual assets of \$23,089.41 on December 31, 1937 showed an increase of approximately \$2,000.00 over the assets on December 31, 1936. Attached to the original report you will find a complete financial statement for the past fiscal year and the report of the auditor and his remarks concerning same. There is also attached to the original report a list of the assets and liabilities and a list showing the status of the various funds which the Society maintains. These records have all been reviewed by the Budget and Finance Committee and will unquestionably be reported by them.

From reports received from the profession throughout the state where during the past year review courses in pediatrics were held, through cooperation of our Committee on Medical Education and the Louisiana State Board of Health, it has been indicated that the courses were received with a great deal of interest and credit to those who formulated the program. We would be glad to have, from time to time, suggestions as to the improvement, if possible, of this service.

It has been a great privilege during the year to have given our cooperation and help to our esteemed President, Dr. Charles M. Horton. He has manifested a great interest in the organization's affairs and probably has deservedly won the appellation of "the traveling President" due to the fact that he has visited so many of our medical meetings throughout the state during the past year. It is certain that this activity of his will reflect with credit to him as well as to our medical organization. We feel that the trust the medical profession has bestowed in him as their President has been faithfully administered.

PARISH AND DISTRICT SOCIETY MEETINGS

During the past year I have had the occasion to attend the following Parish and District Society meetings:

Second District Medical Society
Third District Medical Society
Fourth District Medical Society
Fifth District Medical Society
Seventh District Medical Society
Rapides Parish Medical Society
St. Tammany Parish Medical Society
Lafourche Valley Medical Society

It was a great privilege to be present at these meetings as they were very stimulating both from a scientific and social viewpoint. After a visit to any one of these District or Parish Societies a return visit is always looked forward to with a great deal of interest.

1938 ANNUAL MEETING

Dr. Cassius L. Peacock has done a wonderful piece of work in arranging for our 1938 meeting. His experience on arrangement committees, his keen interest in organized medicine and his earnest desire to put over a successful meeting have been very stimulating to our work and insure the State Society of a most wonderful meeting this year. From a scientific viewpoint I believe that the program is very representative and should be appropriately appreciated by those who are fortunate enough to be able to attend these presentations. May I take this occasion to congratulate the various chairmen of the respective sections for their cooperation in the preparation of the program.

It has been a great privilege of mine to participate in the various activities of the Society as your Secretary-Treasurer during the past year and to take part in a meager way in the accomplishments of our organization.

My report would be incomplete without expressing our thanks and appreciation for the wonderful services rendered by our Assistant Secretaries, Miss Annie Mae Shoemaker and Miss Odile Simpson, and for their faithful and devoted attention to their duties incident to our work. They have

contributed in an appropriate way to the carrying on of the many details of our office.

Respectfully submitted,

P. T. Talbot, M. D., Secretary-Treasurer.

REPORT OF THE HOUSE OF DELEGATES TO THE GENERAL ASSEMBLY

The first session of the 1938 meeting of the House of Delegates was called to order by the President, Dr. C. M. Horton at 10:10 a. m. Dr. Horton welcomed the delegates to the meeting and commended the Chairman of the Committee on Arrangements, Dr. Cassius L. Peacock, for his efforts in making plans for the meeting.

In accordance with a plan submitted at the last meeting of the House, reports of officers and committees were printed and sent to members of the House before the meeting. This was done to expedite the proceedings and proved to be very advantageous in this regard. Below are listed reports which contained recommendations and the action taken in reference to same.

Report of President: The Secretary was instructed to write to Dr. O'Hara expressing appreciation for cooperation in courses in pediatrics conducted in the state.

Report of Councilor of Seventh District: Committee on Public Policy and Legislation was asked to see to it that a coroner is not qualified to fill such an office unless he is a member of organized medicine.

Report of Committee on Cancer: House of Delegates reaffirmed the activities of the Cancer Committee. Appropriation of one hundred dollars for expenses for the year 1938 was approved. The Secretary was instructed to write a letter to the newspapers in Alexandria, Bossier City, Lake Charles, Monroe and Shreveport that have published articles on cancer control and to the radio stations in Alexandria, Lake Charles, Monroe, Baton Rouge and New Orleans that have given time for radio talks on cancer, thanking them for their cooperation; and a letter to Dr. J. A. O'Hara, President of the Louisiana State Board of Health, for the donation of space in the Journal for the publication of monthly articles on the subject of cancer.

Report of Committee on Expert Testimony: The present committee was instructed to continue its efforts to classify medical experts until the next session of the House of Delegates at which time they should make a further report.

Report of Committee on Maternal Welfare: The work as carried on by this committee will be continued and the President is requested to appoint a Committee on Maternal Welfare for 1938-1939.

Report of Committee to Work with the State

Board of Health in the Distribution of Arsenicals: When appointments are made for this committee one member is to be appointed who is connected with the State Health Office.

The Report of the Louisiana State Board of Medical Examiners was presented and upon motion made and carried the House was of the opinion that the Board of Medical Examiners should be commended for the able manner in which the affairs of the Board have been conducted.

Dr. D. C. Browne, representing the Orleans Parish Medical Society, was in attendance at the meeting and presented the subject of library service for doctors throughout the state. The House approved, in principle, the plan submitted and the Chairman was requested to appoint a committee to study this problem and report to the Executive Committee its findings.

A communication from the New Orleans Urological Society concerning the clinic operated in New Orleans under the name of the Public Health Institute was read by the Secretary and referred to the Louisiana State Board of Medical Examiners for action.

The House of Delegates approved the recommendation that the Charter and Constitution be amended in order to make the Vice-Chairman of the House of Delegates a member of the Executive Committee. This recommendation was read at the general meeting of the society and the Secretary was instructed to send out notice of same to all members of the society two months before the 1939 meeting so that final action may be taken at that time.

The Chairman of the Committee on Care of the Indigent Physician offered a suggestion that whenever a physician or member of his or her family received medical or surgical attention from a fellow practitioner and the recipient of the attention, feeling obligated for such attention and the benefactor being unwilling to receive or accept any compensation, that the beneficiary make a contribution to the Fund for the Care of the Indigent Physician in the name of the benefactor. The suggestion was approved and publicity in regard to this matter will be carried in the pages of the Journal.

The House of Delegates endorsed the action of the Executive Committee in sending the pamphlet "Study and Provision of Medical Care" to each component society and decided that disposal of this question should be a matter of action of the component societies.

Communications were read concerning the Louisiana State Hospital Board's attitude toward medical practice throughout the state and motion was made and carried that the House of Delegates go on record as requesting the State Hospital Board not to permit the appointment of any physician

or surgeon to State Hospital Staffs who is not a member of the State Society.

The question of radio broadcasting on the subject of cancer was presented by the Chairman of the Committee on Cancer and after discussion it was decided that the talks should be continued and the announcement be made that such and such a doctor was speaking without eulogy or mention of the attainments of the speaker.

Dr. T. J. Dimitry, representing a committee appointed by the Mayor of New Orleans to make plans for a monument project, asked that the State Society cooperate in this matter. Motion was made and carried that the House of Delegates commend the action of Mayor Maestri, that the Committee on Walter Reed Memorial and the Committee on History of the Louisiana State Medical Society be requested to cooperate to the fullest extent with the Mayor and the committee appointed by the Mayor and that the committees use all possible speed to further this project.

A communication in reference to venereal disease control was read by the secretary and referred to the Committee on Public Policy and Legislation for consideration.

The following Fraternal Delegates were present and brought greetings from their respective medical societies:

Dr. A. L. Nelson, Nacogdoches, Texas.

Dr. H. H. Smith, Fort Smith, Arkansas.

The report of the Committee on Resolutions, which was as follows, was read and adopted:

Whereas, the Louisiana State Medical Society has enjoyed one of its most successful meetings, and

Whereas, the success of this meeting is due to the zealous efforts and cooperation of several individuals and organizations,

We offer the following resolutions of cooperation:

1. To Dr. C. L. Peacock, General Chairman of the Committee on Arrangements, for his untiring efforts which have contributed greatly to the success of the meeting;

2. To the Orleans Parish Medical Society, host of the meeting, for the splendid cooperation and the excellent manner in which the convention was held;

3. To the very efficient staff of the Secretary's office and the Secretary-Treasurer whose careful preparation of the details of the convention contributed much to the efficiency of the meeting and whose pleasing personalities contributed materially to the pleasantries of our meeting;

4. To the press of New Orleans for their assistance in spreading on the pages of their papers news of the convention and the various personages in attendance;

5. To Tulane and Louisiana State Universities for their cooperative spirit in entertaining the membership of the convention;

6. To the various scientific and commercial exhibitors who contributed greatly to the excellence of the convention;

7. To Dr. Joseph A. O'Hara for the splendid luncheon tendered to the House of Delegates and guests;

8. To the Woman's Auxiliary of the society whose inspiration and encouragement make these meetings possible;

9. To Seymour Weiss and the Roosevelt Hotel, convention headquarters, for the many courtesies extended by the personnel of the hotel;

10. To Dr. King Rand, Chairman of the House of Delegates, for the efficient and orderly manner in which he conducted the meetings of the House of Delegates;

11. To the membership of the State Society who attended the convention and by their presence contributed to the success of the meeting.

We recommend that a copy of these resolutions be incorporated in the minutes of the meeting, a copy be given to the press, and a copy be given to the Bulletin of the Orleans Parish Medical Society and to the New Orleans Medical and Surgical Journal.

The following officers were nominated and duly elected:

President-elect: Dr. Clarence A. Lorio, Baton Rouge.

First Vice-President: Dr. C. L. Peacock, New Orleans.

Second Vice-President: Dr. Jerome Landry, New Orleans.

Third Vice-President: Dr. P. D. Abramson, Shreveport.

Secretary-Treasurer: Dr. P. T. Talbot, New Orleans.

Councilors:

First District: Dr. H. Bernadas, New Orleans.

Second District: Dr. D. N. Silverman, New Orleans.

Fourth District: Dr. M. D. Hargrove, Shreveport.

Fifth District: Dr. J. B. Vaughan, Monroe.

Committees:

Scientific Work: Dr. P. T. Talbot, Secretary-Treasurer; Dr. A. E. Fossier and Dr. A. A. Herold.

Public Policy and Legislation: Dr. J. A. O'Hara, President; Dr. P. T. Talbot, Secretary-Treasurer; Dr. C. Grenes Cole, Chairman; Dr. Sam Hobson and Dr. Glenn J. Smith.

Journal: Dr. W. H. Seemann and Dr. Lucien A. LeDoux; both for a term of three years.

Medical Defense: Dr. J. W. Faulk, term of three years.

Health and Public Instruction: Dr. F. R. Go-

mila, Chairman; Dr. M. H. Foster, Dr. J. Q. Graves, Dr. J. K. Griffith and Dr. John Signorelli.

Hospitals: Dr. J. T. Nix, Chairman; Dr. J. L. Scales, Dr. O. P. Daly, Dr. J. E. Walsworth and Dr. A. J. Comeaux.

Delegate to American Medical Association 1939 and 1940: Dr. W. H. Seemann, New Orleans.

Alternate to Delegate to American Medical Association 1939 and 1940: Dr. A. A. Herold, Shreveport.

Chairman of House of Delegates: Dr. King Rand, Alexandria.

Vice-Chairman of House of Delegates: Dr. Val H. Fuchs, New Orleans.

The following names were proposed for appointment on the State Board of Medical Examiners to fill the vacancy occurring at the expiration of Dr. George S. Bel's term this year: Dr. George S. Bel and Dr. Sam Hobson.

Invitation to hold the 1939 meeting in Alexandria was accepted.

Respectfully submitted,

P. T. Talbot, M. D.,
Secretary-Treasurer.

REPORT OF THE COMMITTEE ON MEDICAL DEFENSE

To the Officers and Members
House of Delegates, 1938
New Orleans, Louisiana.
Gentlemen:

As Chairman of the Committee on Medical Defense, I wish to submit the following report of activities since the 1937 annual meeting:

Three cases have been referred to the committee, two against a doctor of New Orleans and one against a doctor of Reserve. The two New Orleans' cases have been referred to our counsel and have not yet come up for trial. On January 22, 1938 Mr. Adams notified our committee that the claim for malpractice against the doctor of Reserve had gone to prescription on January 17, 1938, and he was, therefore, closing his file on this case. He stated, also, that prior to prescription accruing he had been advised by the claimant's attorney that the claimant had decided not to institute suit.

A case brought against a doctor of Lake Providence prescribed on October 6, 1937, and we were so notified by our counsel, who stated that he had closed his file on this case.

A committee representing the Orleans Parish Medical Society communicated with us during the past year advising that one of their members had been threatened that suit would be filed by a patient and asked that the Committee on Medical Defense offer defense should this suit be brought. Your chairman advised the secretary of the society that defense would be rendered upon recom-

mendation by his society; however, we have not received further information or recommendation in this regard.

Attached to the the original copy of this report is a financial report of the Medical Defense Savings Account for 1937, and, also, a list of the securities held in the Trust Department of the Whitney National Bank for the Medical Defense Fund, as of December 31, 1937.

Respectfully submitted,

S. Chaille Jamison, M. D., Chairman,
Committee on Medical Defense.

THE CARE OF THE INDIGENT PHYSICIAN

Since the Fund for the Care of the Indigent Physician has been deprived of the specific amount of revenue allocated to its use by re-applying this amount to the Medical Defense Fund,

And since this diversion of the fifty cents (.50) per member to the Medical Defense Fund has and will seriously interfere with the establishment of a Fund for the Care of the Indigent Physicians,

The Committee for the Care of the Indigent Physician beg to submit the following suggestion for the consideration of the members of the House of Delegates:

Whenever a physician or a member of his or her family received medical or surgical attention from a fellow practitioner, and the recipient of the attention feeling obligated for such attention, and the benefactor being unwilling to receive or accept any compensation; it is suggested that the beneficiary make a contribution to the Fund for the Care of the Indigent Physician in the name of the benefactor.

It is hereby understood that this is merely a suggestion and in no way compulsory or binding.

Dr. C. A. Weiss, M. D., Chairman,
Committee for the Care of the
Indigent Physician.

COMMITTEE ON MONUMENTS

Dr. Theodore J. Dimitry has been designated by his Honor Mayor Robert Maestri as Chairman of a Committee to develop New Orleans as a City of Monuments. At the meeting of the House of Delegates, Louisiana State Medical Society, May 4, a resolution was introduced asking for co-operation between the Reed Memorial Committee, the Louisiana Historical Committee and the Maestri Committee so as to erect at an early date a monument depicting in pageant the events of 1905.

The Maestri Committee suggested to the Society that the monument be a frieze, showing in pageant the events of 1905; the location on the neutral grounds at Claiborne and Tulane Avenue. This monument is to be followed by others, making Tulane Avenue the Medical Avenue of the City.

TRI-PARISH MEDICAL SOCIETY

A meeting of the Tri-Parish Medical Society was held in Lake Providence on May 6, 1938 at the City Hall. There were present Dr. E. O. Edger-ton, president; Dr. Dean H. Allen, secretary; and Drs. G. W. Gaines, D. F. Davis, W. K. Evans, E. D. Butler, J. P. Davis, and William H. Hamley. Dr. L. C. Clark, from the staff of Vicksburg Sanitarium at Vicksburg, Mississippi, was guest speaker and presented a paper on pneumonia, principally that of the lobar type.

Dr. Hamley gave a report of the recent meeting of the Louisiana State Medical Society at New Orleans.

The next meeting of the Tri-Parish Society will be held on June 7 at Tallulah.

WASHINGTON PARISH MEDICAL SOCIETY

The following speakers have appeared before the Washington Parish Medical Society during the early part of this year: Dr. Willard Wirth, of New Orleans, who spoke on "Diagnosis and Treatment of Congestive Heart Failure"; Dr. Sydney Jacobs, of New Orleans, who spoke on "Practical Aspects of Pneumothorax in Tuberculosis"; and Dr. Adolph Jacobs, of New Orleans, who spoke on "Leukorrhea."

ASSUMPTION PARISH MEDICAL SOCIETY
OFFICERS

1938

President: Dr. H. C. Dansereau, Labadieville.

Vice-President: Dr. W. W. Pugh, Napoleonville.

Secretary-Treasurer: Dr. P. M. Payne, Napoleonville.

Delegate: Dr. C. S. Roger, Napoleonville.

INTERNATIONAL COURSE IN MALARIOLOGY

The Istituto di Malariologia Ettore Marchiafava (Superior School of Malariology "Ettore Marchiafava") of Rome is again offering the International Course which has attained so much success in the past years.

The course is open exclusively to postgraduate physicians, and will be held from July 18 to September 17, 1938. Laboratory work and visits and residence in experimental stations and in a center of induced malaria will be included in the course. Excursions to reclaimed lands will also be part of the course.

The Istituto di Malariologia Ettore Marchiafava (Politecnico Umberto I, Roma, Italy) will furnish, upon request, any desired additional information, or, if preferred, this office will gladly secure same for the interested parties.

G. G. Chiavari,
Royal Consul of Italy,
4630 Saint Charles Avenue.

SOCIETY OF GASTROENTEROLOGY

One of the major activities of the recent Louisiana State Medical Convention was the dinner of the Louisiana Society for the Advancement of Gastroenterology at the Patio Royal, attended by the members, their wives and guests, and honored by Dr. Joe Felsen of New York, as guest speaker, who was introduced by the president of the local chapter, Dr. A. L. Levin.

Dr. Felsen reviewed his experience in Paris last summer while attending the meeting of the International Society of Gastroenterology. He expressed considerable pleasure in finding that medicine recognizes no racial frontiers, no prejudices, and that international good will was plainly evident though political restlessness existed on the continent. He stressed further that the profession in Europe is exceptionally well trained in its respective subjects, but is lacking in the scientific equipment we enjoy in this country where our endowed institutions are privileged to have the best available.

TUBERCULOSIS AND PUBLIC HEALTH ASSO-
CIATION OF LOUISIANA

Four authorities on tuberculosis do the talking in the National Tuberculosis Association's new medical film, "Diagnostic Procedure in Tuberculosis," which will be released early in the summer. The film, which lasts twenty-five minutes, will be shown by local tuberculosis associations throughout the United States before medical and health groups. It is the first movie of its kind in sound produced by the National Tuberculosis Association.

The doctors who participate in the film are Dr. Kendall Emerson, Managing Director of the National Tuberculosis Association, New York; Dr. Ralph S. Muckenfuss, Director of the Bureau of Laboratories of the New York City Department of Health; Dr. Esmond R. Long, Director of the Henry Phipps Institute, Philadelphia; and Dr. Edgar Mayer, Assistant Professor of Medicine, Cornell College, New York.

Dr. Emerson is the narrator and in his introductory remarks says, "In the front line of the fight against tuberculosis is the general practitioner. He sees the patient first and upon his skill and judgment depends the patient's future. The greatest service he can render is to make the diagnosis correctly and without delay. There are certain diagnostic procedures every general practitioner is capable of carrying out."

Dr. Muckenfuss demonstrates a simple technic of sputum examination. The making and reading of the tuberculin test is explained by Dr. Long. Dr. Mayer explains the roentgen ray as a means

of diagnosing tuberculosis and the fundamental facts of roentgen ray interpretation.

NEWS ITEMS

On Wednesday, May 25, Dr. Isidore Cohn, Professor of Surgery and Associate Director of the Department in the Graduate School of Medicine of the Louisiana State University Medical Center, spoke at a meeting of the Association of Surgeons of the Southern Railway System. The subject of Dr. Cohn's address was "Controversial Questions in the Management of Fractures." The meeting of the Southern Railway Surgeons was held in New Orleans on May 24-26.

The oral, clinical, and pathological examinations for Group A and Group B applicants to the American Board of Obstetrics and Gynecology will be held in San Francisco, California, on Monday and Tuesday, June 13 and 14, 1938.

The third annual convention of the National Society for the Advancement of Gastroenterology will be held on June 1 and 2 at the Squibb Hall, Squibb Building, 745 Fifth Avenue, New York City. A very interesting program is assured.

The Michael Reese Hospital, Chicago, offers a graduate course in electrocardiography by Dr. Louis N. Katz from August 22 to September 3, 1938, inclusive.

Dr. Isidore Cohn, Professor of Surgery and Associate Director of the Department in the Graduate School of Medicine of the Louisiana State University Medical Center, gave the address this year at the Graduation Exercises of the Touro Infirmary Nurses on May 7.

The twenty-third annual meeting of the American Association of Industrial Physicians and Surgeons will be held at the Palmer House, Chicago, June 6-9.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the week ending April 16, there were reported the following diseases in double figures: 260 cases of syphilis, 35 of pulmonary tuberculosis, 32 of pneumonia, 18 of gonorrhea, 17 of cancer, and 15 each of chickenpox and measles. Of the unusual diseases, one case of poliomyelitis arose in Lincoln Parish. Six cases of typhoid fever were listed, three coming from Jefferson, two from Morehouse and one from Claiborne. Syphilis

again was reported in very large figure, in the week ending April 23, 306 cases appearing on the records of the Bureau of Epidemiology. There was an increase in the number of cases of whooping cough, 34 appearing as compared with nine the week before. There were also listed 28 cases of pneumonia, 25 of pulmonary tuberculosis, 16 of typhoid fever, 15 each of gonorrhea and measles, 14 of cancer, 13 of hookworm and 12 each of chickenpox and malaria. The typhoid fever cases were reported from all over the state; not a single parish had more than two cases. Two cases of cerebrospinal meningitis were reported from Caddo and one from Orleans. Caddo also reported four cases of tularemia; Lafayette one case of typhus fever. For the seventeenth week of the year, ending April 30, there were more cases of syphilis listed than all other reported diseases combined, there being 353 such reports. Syphilis was followed in turn by pneumonia with 34 cases, gonorrhea with 32, pulmonary tuberculosis with 27, cancer with 24, measles with 17, typhoid fever with 15, diphtheria with 12 and influenza with 11. Of the 15 cases of typhoid fever reported, six were from Orleans, three from St. Charles and not more than one case from any one parish elsewhere. However, it must be remembered that the six cases reported from Orleans were imported and two had been previously reported. One case of smallpox was reported from Orleans, and one case of poliomyelitis from Assumption. For the week ending May 7, 381 cases of syphilis were listed. There was a big jump in the incidence of measles with 75 cases reported, followed in order of frequency by 58 cases of gonorrhea, 42 of pulmonary tuberculosis, 33 of pneumonia, 25 of cancer, 11 of diphtheria and 10 of malaria. The nineteenth week of the year, coming to a close on May 14, was characterized by the small number of cases of reported syphilis, there being 210 such instances. Other diseases in double figures were 45 cases of pulmonary tuberculosis, 44 of whooping cough, 27 of cancer, 20 of pneumonia, 16 of gonorrhea, 15 of malaria, 13 each of measles and scarlet fever, and 12 of pellagra. Only nine cases of typhoid fever were reported this week, with Calcasieu and Rapides reporting two each. Tularemia was observed in Ascension Parish and cerebrospinal meningitis, one instance in each of these two parishes, Orleans and Vermilion.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reports that for the week ending April 16, there were surprisingly few deaths in the City of New Orleans, 122 this particular week as contrasted with 179 the week before. Of these, 75 were in the white population and 47 in the

colored. Infant mortality was only 11 this week. One week later, there was an increase of 10 in the number of deaths and all of the increase was in the colored race. There were nine deaths in the children. Figures for the people dying in New Orleans in the last week of April are all static. For the week ending April 30, 131 deaths were listed, practically the same as the week before, and with 70 of these deaths occurring in the white and 61 in colored people. There was a slight increase in infant deaths, this figure going up to 15. For the week ending May 7, again there was very little change. There were 136 people to die in this week, with a division 79 white, 57 negro and 13 infant deaths.

REPORT OF THE A. A. M. S. W.

As has been done in the past, the Gulf District of the American Association of Medical Social Workers is sending you a summary of its activities during the year 1937-1938.

During the year 1937-1938 the Gulf District has tried to find out what the various health agencies and public and private relief agencies consider the most important health lacks in the community. We have met with representatives of the Child Welfare Association, the Associated Catholic Charities, the City and State Departments of Public Welfare, the Bureau of Public Health Units, the State Hospital Board and the State and City Boards of Health. All of the various sources felt the medical lacks were the same and they are listed as follows:

1. Inadequate facilities for the prevention and treatment of tuberculosis. This included lack of sanatoria beds, preventoria, relief to tuberculous patients in their own homes and applied to both adults and children, white and colored, particularly colored.
2. Inadequate facilities for the prevention and treatment of venereal diseases. This also applied to both children and adults, white and colored.
3. Lack of adequate dental care.
4. Lack of adequate visiting nurses.
5. Inadequate facilities for free medicine.
6. Lack of visiting doctors.
7. Absence of boarding homes or institutional care outside of Orleans Parish for the chronically ill.
8. Overcrowding in institution for feeble-minded necessitating extended delays in admission.
9. Inadequate institutionalization or foster home care for children with chronic diseases.
10. Lack of convalescent care outside of Orleans Parish.
11. Lack of adequate legislative measures in the control of communicable diseases.

The Central Council of Social Agencies has reinstated the Committee on Health and a summary of our findings has been sent the Council for submission to the Committee on Health. We are hoping that through the Council some of these health lacks in the community can be obliterated.

Louise Meyer, Chairman.

Dr. Isidore Brickman, appointed only a few months ago as Superintendent of the State Colony and Training School at Pineville, died suddenly Sunday, May 15, 1938. The death of Dr. Brickman will be a great shock to his many friends and particularly to those who noted his vigorous activity when the Mid-State Hospital was dedicated a few months ago. A graduate of Tulane University Medical School, Dr. Brickman practiced for a short time in New Orleans, then went to Pineville to become a resident physician and ultimately the head of the institution.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. Frederick G. Ellis, Shreveport.
President-elect—Mrs. S. M. Blackshear, New Orleans.

First Vice-President—Mrs. C. A. Martin, Welsh.
Second Vice-President—Mrs. A. G. McHenry, Monroe.

Third Vice-President—Mrs. D. C. McBride, Alexandria.

Fourth Vice-President—Mrs. A. F. Hebert, New Orleans.

Treasurer—Mrs. O. C. Rigby, Shreveport.

Recording Secretary—Mrs. D. T. Milam, Monroe.

Parliamentarian—Mrs. A. A. Herold, Shreveport.

Corresponding Secretary—Mrs. C. B. Erickson, Shreveport.

Press and Publicity—Mrs. R. T. Lucas, Shreveport.

Greetings to the members of the Woman's Auxiliary to the Louisiana State Medical Society, and to those doctors' wives whom we hope to have join during the year.

Those of you who were fortunate enough to be in New Orleans at the state convention realize that splendid work is being done by the different auxiliaries, and that many pleasant friendships have developed from the contacts produced by them. What could be nicer than work of the kind we love, and life friendships made?

I am looking forward to meeting all of you some time through the year, since the finance committee in the budget has given me a chance to make each auxiliary a visit.

During the coming year, may I bespeak your

extended interest and hearty support in this organization we have come to love.

Yours sincerely,

Edna Ellis, President.
(Mrs. Frederick G. Ellis)

JEFFERSON DAVIS PARISH

The Woman's Auxiliary to the Jefferson Davis Parish Medical Society met at the home of Mrs. C. A. Martin, on May 10. A report of the convention held in New Orleans was given by the delegate, Mrs. John M. Whitney.

Parish officers were named for the Women's Field Army of American Society on Cancer Control.

There was a general discussion of the moving picture "The Birth of a Baby."

The program consisted of a review of A. J. Cronin's book, "The Citadel," and a humorous reading "On Being Clinicked," by Alice Hegan Rice, followed by a piano solo.

The auxiliary will not convene during the summer months, but will resume meetings on October 11.

Mrs. John M. Whitney,
Publicity Chairman.

CADDO PARISH

The Woman's Auxiliary to the Shreveport Medical Society held its annual meeting Wednesday afternoon in the home of Mrs. J. A. Hendrick.

Mrs. T. M. Oxford, Chairman of the Committee on Public Relations, presented to Mrs. Rew a silver mounted gavel with the following inscription: "Presented to Mrs. Charles E. Rew by the Parliamentary Law Class, Woman's Auxiliary to the Shreveport Medical Society, 1938." Mrs. Rew was later installed as president, succeeding Mrs. John T. Crebbin.

The following officers were elected for next year: president-elect, Mrs. C. P. Rutledge; first vice-president, Mrs. T. E. Strain; second vice-president, Mrs. E. C. Simonton; recording secretary, Mrs. D. R. McIntyre; corresponding secretary, Mrs. P. W. Winder; and treasurer, Mrs. C. R. Mays.

In the garden, following the business meeting, Mrs. F. G. Ellis dispensed punch from a flower-decked table.

Mrs. John L. Scales,
Publicity Chairman.

PRESIDENT'S ANNUAL REPORT 1937-1938

As your president, it affords me great happiness to give this report of splendid endeavors and achievements of the parish auxiliaries, which is evident proof of the keen interest and loyal cooperation manifested by each member.

I am deeply grateful to the officers and members of the Executive Board who have given so generously of their time and guidance, and whose sincere friendship and advice have helped so genuinely to dispel whatever dark clouds hovered across the horizon from time to time. Although it was not my pleasure to have personal contact with all of you, I am especially indebted to the corresponding secretary, Mrs. Aynaud F. Hebert; Mrs. Cassius L. Peacock, treasurer; the organization chairman, Mrs. C. Grenes Cole; Mrs. Lucian W. Alexander, chairman of press and publicity, and Mrs. S. Chaille Jamison, chairman of archives, for the encouragement and enthusiasm the many happy hours of close association with them this past year of auxiliary work have given me.

We were fortunate indeed in having an Advisory Committee with Dr. J. Q. Graves of Monroe as chairman, who assisted us very materially in the many questions that confronted us, and to whom I extend my sincere thanks.

At the beginning of our year, letters were sent to the president of every parish medical society in whose parish there was no auxiliary, also to the councilors of the eight congressional districts of the state society, asking their permission and assistance in the organization of an auxiliary in their parishes. Through the untiring, incessant efforts of our organization chairman, Mrs. C. Grenes Cole, and the excellent cooperation of our councilors, the result of these letters is the addition to our group of six new auxiliaries, the largest number to be procured at any one time since our inception. To them I extend a hearty welcome into our organization.

These auxiliaries are as follows: Terrebonne, St. Mary, St. Tammany, Washington, Rapides, and Iberville.

This makes a total of twelve in the state, with a membership of 510, an increase over last year of 108 members; of this number 8 are members-at-large. This splendid accomplishment not only gives us a larger body of interested and active doctors' wives, but adds greater strength to the aims and purposes of organized medicine, thereby affording better health education to the layman.

Thirty-three doctors' wives were invited to join as members-at-large, and letters were written former members of both Morehouse and Webster parishes endeavoring to reorganize these auxiliaries, but without results.

Copies of the "National Handbook for State Auxiliaries," and a copy of our State and National Constitution and By-Laws; projects of the state for the ensuing year, and names of National, Southern and Parish Auxiliary Executive Boards were sent each member of our State Executive Board (which includes all parish presidents), early

in the year, so that she could familiarize herself with the procedure of both the National and State organizations; and each parish was sent, with the compliments of the state auxiliary, the four issues of the A. M. A. Auxiliary news letter.

Our stationery this year, carried the names of all officers, councilors and standing chairman, facilitating correspondence for the parish auxiliaries. The receipt books which we have formerly used, will be discontinued in the future, by permission of the national treasurer, and this saving will add materially to our funds.

Due to the depleted status of our treasury, brought about by the exceptionally heavy expenses incurred, which however, the Executive Committee felt was for posterity of the organization, it was thought best to postpone the printing of the Year Book until a later date. It was also for this reason that my proposed official visit to each parish auxiliary was abandoned. I regret sincerely that I did not have the opportunity of meeting each of you personally and having the pleasure of knowing you better, but I feel that my contacts with you through correspondence, and articles in the Journal from time to time, compensated in some measure for this.

Since all of the annual reports speak for themselves, I will touch but briefly upon the highlights.

In the remaining unorganized parishes of the state, the councilors report efforts being made to contact the interested doctors' wives with the hope of their becoming auxiliary-minded and ultimately organizing these parishes.

The steel filing cabinet that has been purchased by the archives chairman in which to preserve the records of our organization, is in the basement of the Hutchinson Memorial Building, the same building that houses the offices of the Louisiana State Medical Society. Mrs. Jamison has filed to date, all data of the past seven years that she has been able to procure.

Doctors' Day was observed by the majority of the parishes in diverse manners; local radio stations and newspapers joined in giving this well-deserved movement widespread publicity. Boutonnieres were sent to the doctors by one parish auxiliary; another gave a barbecue supper; another a spaghetti supper; still another remembered their doctors who were ill with cards, flowers and books, and another invited their doctors to drop all their duties and have coffee with their wives, in a very unique manner. The Orleans Parish Auxiliary did not observe Doctors' Day this year due to the closeness of dates of the annual installation of parish society officers; the Graduate Medical Assembly and the State Convention dates. However, telegraphic messages were sent both the parish and state societies by this auxiliary. The state

auxiliary sent Dr. Horton, President of the Louisiana State Medical Society, a letter extending greetings of the auxiliary to all doctors for Doctors' Day.

Clippings and news items of all auxiliary activities have been collected by the historian and mounted in the History Book, and this year marks the inception of a state emblem, showing half of the caduceus with the magnolia, our state flower, date of organization and our name. This emblem will be used on all official documents, programs and printing matter.

Up to date, the proffered services of the Legislation Committee have not been needed, but they have stood ready to render whatever assistance to the State Society that was deemed necessary.

Thirty-seven dollars (\$37.00) was subscribed to the Indigent Physicians' Fund, and a large number of individual subscriptions were procured from the membership for the Women's Field Army for the Control of Cancer.

Our membership has been kept advised of all activities through the medium of our state medical journal, "New Orleans Medical and Surgical Journal," and also the "Tri-State Medical Journal," thereby publicizing auxiliary news throughout four states; namely, Louisiana, Mississippi, Arkansas and Texas. I take this opportunity to thank most heartily, Doctor John H. Musser, Editor-in-Chief, and Dr. Paul T. Talbot, General Manager of the New Orleans Journal, for their generosity in allocating as much space each month as needed, and also Mr. F. A. Richards of the Tri-State Journal. Due to the illness of our Publicity Chairman, the proposed December and March news letters, which would have been the first of their kind in Louisiana were abandoned. This means of bringing before the membership monthly news of sister auxiliaries, I feel will stimulate keen interest, and I hope this endeavor will be carried on this coming year.

A census taken by the Public Relations Chairman reveals an overwhelming number of members holding memberships and offices in other organized clubs, and who, by so doing, strengthen and uphold the ideals upon which we are founded, and cement the friendliness and understanding between the lay public and the profession.

The state projects for the year as follows, have all been sponsored by the auxiliaries wherever feasible:

- Organization
- Health education
- Anti-tuberculosis campaign
- Anti-cancer campaign in conjunction
with the Women's Field Army
- Periodic health examinations
- Summer-round-up of school children
- Hygeia

Safety driving
 Indigent Physicians' Fund
 Collection of used clothing and medical samples
 A. M. A. radio health broadcasts
 Doctors' Day
 Jane Todd Crawford Memorial and
 Romances and Research of
 Medicine

Hygeia has been placed in both white and negro schools; public institutions, libraries and public offices throughout the state, many of which had not heretofore received this magazine. Hygeia essays were also sponsored in both Catholic and Protestant schools in Calcasieu Parish with prizes for the best papers.

The importance of the A. M. A. radio broadcasts was greatly stressed and reports are that these weekly health talks are eagerly looked forward to by not only our members, but the lay public as well.

Caddo Parish is doing a very commendable philanthropic work in caring for the needs of thirteen children in the Pines Preventorium, sending the Board of Health dental trailer to the hospital to do the necessary dental work for these underprivileged children; and they also supplied the diphtheria toxoid for these patients. This Tuberculosis Committee traveled over approximately five hundred miles in the parishes of Caddo and Bossier directing the sale of Christmas seals, 70 per cent of which amount was turned over to them to carry on this work.

Orleans Parish has recently revised their constitution and by-laws, making many important changes. The fiscal year will now coincide with that of the parish society; dues have been raised to \$4.00 per annum, and all committee chairman now become members of the Executive Board. This auxiliary has also conducted classes in public speaking and parliamentary procedure, as have other auxiliaries in the state, for their members, and which were always well attended. The collection of medical samples and used clothing, and periodic health examinations continue to be major projects of this parish. Of worthy note, is the inauguration of a Fund for Indigent Widows of Doctors; not only the widows of members of the Orleans Parish Medical Society, but of all doctors in the community. This auxiliary has enjoyed a banner year so far in membership, with the addition of fifty new names to their roster.

Interest in Hygeia is prevalent in Ouachita Parish, a gain of eleven new subscriptions over last year having been obtained. More than half the membership of this auxiliary belong to, and hold office in other organizations, thereby rendering an important service to their city. An annual event of this group is an entertainment of some

kind for the graduating class of nurses at Saint Francis Sanitarium. A permanent memorial to the memory of two of their charter members who have answered the call is now under way.

Tri-Parish assisted in the summer-round-up of school children, and sponsored, with the help of their local Public Health Unit and American Legion, an eye clinic for thirty children in these combined parishes.

A tuberculosis cottage was partly furnished by the Terrebonne Auxiliary, and magazines and old linens sent to the Welfare for distribution to the sick. Plans are now in progress to cooperate with the Committee for the Welfare of Crippled Children in this parish.

At Thanksgiving and Christmas time, baskets of food, toys and clothing are distributed by many of the auxiliaries to poor families in their locality. The sale of tuberculosis Christmas seals, assisting local Red Cross Chapters, Junior League, Girl Scouts, Y. W. C. A., and other local philanthropic projects, governed by the needs of the community, are sponsored by all of the parishes.

Iberville Parish, the latest to join our ranks, is supporting a movement for a new hospital, and is very hopeful of the outlook.

While the newer auxiliaries have not as yet had the opportunity to enjoy such full programs as the larger groups, most all of them did celebrate Doctors' Day, and I feel sure that the future holds prospects of auxiliary happiness and activity for them.

I reluctantly report to you here, that interest in the Homer Auxiliary in Claiborne Parish has evidently waned considerably. Despite the fact that personal letters were written every member of this group, and many letters to the officers, replies were received from only two ladies, Mrs. E. B. Middleton and Mrs. E. A. Campbell, both of which were very discouraging. In view of the fact that I have been unable to ascertain why these ladies have not had one meeting this past year, and the reason this auxiliary has not been active, it is evident that they have disbanded, which is a very regrettable fact indeed.

For the most part, auxiliary meetings are well attended, some having luncheon meetings, others following their business sessions with a varied program of entertainment and a tea, with each member having the opportunity to serve as a co-hostess during the year. A feeling of warm friendship and unity of thought prevails among the parishes. Ideas are exchanged and suggestions offered which prove beneficial to each other. In the districts where auxiliaries are not very far apart, and too much time is not consumed in traveling, presidents visit with each other at monthly meetings and occasionally, the entire membership also, and plans and problems dis-

cussed to their mutual interest. Dues in the auxiliaries range from \$1.50 to \$4.00 per annum.

The foregoing resume of excellent accomplishments is indeed gratifying, and definite evidence that the auxiliary to the medical profession has earned for itself an enviable and permanent place in the welfare of its community, and has also proved its worth to the doctor by being ever mindful of the ideals for which we stand—health education and unity and harmony among doctor's families.

In November, during the Southern Medical Association Convention in New Orleans, it was my good fortune to meet our very charming National president, Mrs. Augustus S. Kech, and to again resume acquaintance with Mrs. Frank N. Haggard, southern president, whom I met in Monroe last year. The delightful and inspiring hours I spent with these ladies afforded me a keener insight into the meaning of "Woman's Auxiliary," its aspirations and attainments.

A debt of deep gratitude is due the Orleans Parish Auxiliary, our hostesses for this convention, for their consideration in not using the fifty dollars for entertainment purposes, which amount was allocated at a previous state meeting. This action was decided upon, cognizant of the status

of our treasury at the present time. Only incidental items, if any, will be incurred by the state.

To have served you as your president has been an honor and a privilege, and a memory that I shall always be happy to recall, for I feel that fate was kind indeed, in giving me the opportunity to work with and enjoy the friendship of so many charming doctors' wives whom I have come to know and love during this past year. It is my fond hope that these contacts will materialize into years of everlasting friendliness and devotion.

In parting, dear members, I extend to each of you my love and good wishes for health and happiness, and hope that you will continue to enjoy years of great auxiliary activity and interest, and bask in the sunshine of fruitful achievements.

For my successor in office, I bespeak a most successful regime, and trust that the same loyal, staunch support you have accorded me, for which I thank you most heartily, will bring as much happiness and pleasure to her as it has brought to me.

Alma W. Feldner, President
(Mrs. George D. Feldner)

BOOK REVIEWS

Mental Therapy: Studies in Fifty Cases: By Louis S. London, M. D. New York, Covici-Friede, 1937. 2 vols. Price \$12.50.

The author presents a review of 50 cases from his own experiences dealing with many varieties of personality disorders and mental disease. He emphasizes his own method of treatment which is a combination of the cycle analytic and intuitive as sponsored by Steckel. A psychiatrist may read these with interest but on completing them will have found little of specific value. The general practitioner would find it unsuitable for his needs. Its chief attraction lies in the attempt actually to record 50 cases treated by this method.

L. A. GOLDEN, M. D.

Surgical Diseases of the Mouth and Jaw: By Earl Calvin Padgett, B. S., M. D., F. A. C. S. Philadelphia and London, W. B. Saunders Company, 1938. Pp. 807. Price \$10.00.

Padgett's "Surgical Diseases of the Mouth and Jaws" is a comprehensive and readable volume of approximately 807 pages with 334 illustrations. This volume fills a definite need in that it brings up to date the fundamentals of surgery and treatment of the diseases of the mouth and jaw. Two notable additions are seen in the chapter on speech training and the section dealing with diagnosis,

care and management of neoplasms and malignant neoplasms. The bibliography is not too large. The index is sufficiently inclusive to be of value in ready reference.

NEAL OWENS, M. D.

Fractures and Dislocations for Practitioners: By Edwin O. Geckler, M. D. Baltimore, William Wood and Company, 1937. Pp. 252. Price \$4.00.

This small book has been compiled for the use of the general practitioner and the medical student, supplemental to the more detailed texts on the subject. The book well meets the need of immediate or emergency treatment in this field, where time does not permit a complete review of the individual problems in the more extensive works. The book is divided into two parts. Part one deals with methods of reduction and immobilization, and the general treatment of fractures as used today. Part two takes up methods of reducing and maintaining dislocations. Various methods in the preparation and use of plaster bandages and splints are taken up. The methods of open reduction and the methods of operative fixation in femoral neck fractures are mentioned, but purposely not described. In so far as it is practicable the author has eliminated the use of elaborate and expensive equipment in the methods here set

forth. A very complete reference list accompanies each chapter also. The book covers its field in the manner intended by its author, and should be worth its cost to those for whom it is intended.

O. J. HARTIG, M. D.

Operative Obstetrics: By J. M. Munro Kerr, LL. D., M. D., F. C. O. G. 4th ed. Baltimore, William Wood, 1937. Pp. 847. Price \$12.00.

This is a fourth edition written by a master obstetrician. With a wealth of practical experience extending over many years, he sets forth his own statistics and ideas comparing them with other clinics. This volume is devoted to every conceivable form of operative obstetrics and includes a chapter on analgesia and anesthesia, ectopic pregnancy, and fetal injury.

Dystocia is discussed from many angles and consumes seventeen of the thirty-seven chapters; the management of each form is given. The explanation of every maneuver is detailed and there is a minimum of theory.

The introductory division of the book seems elementary on first glance but definitely adds to the thoroughness of this work. The bibliography is in the footnotes of each page and aids in the ease of reference.

The illustrations are well depicted but there are too few for such a text. Perhaps the author allowed for this in his excellent verbal portrayals. The frequent use of the personal pronoun enhances the charm of the writer's style.

M. LYON STADIEM, M. D.

Obstetric and Gynecologic Nursing: By Frederick H. Falls, M. S., M. D., F. A. C. S. and Jane R. McLaughlin, B. A., R. N. St. Louis, C. V. Mosby, 1937. Pp. 492. Price \$3.00.

This is a compact volume of 492 pages covering the more important subjects in gynecology and obstetrics. The physiology, pathology, signs and symptoms, treatment and nursing care of gynecologic and obstetric cases are discussed in a simple and forceful manner. An excellent glossary completes the volume.

In the foreword the idea is presented that nurses today should know more about care of the patient and operating room procedure. Perhaps this is true, but the reviewer believes that, in this volume, the pendulum is carried too far in this direction and that the subject matter is too deep and too voluminous for the average student nurse to digest in a short period of time. It is, however, a good volume for reference work or for the graduate nurse to read.

C. G. COLLINS, M. D.

Pediatric Urology: By Meredith F. Campbell, M. S., M. D., F. A. C. S. New York. The Macmillan Co., 1937. 2 Vol. Price \$15.00.

Although this is the first and only publication dealing solely with urologic conditions of infancy and childhood, the author needs no introduction to those who read the current medical journals pertaining to urology and kindred conditions. The text is of inestimable value to the pediatrician and general practitioner as well as the urologist. As the author so aptly states, "pediatric urology is in its diaper age and as yet comparatively few physicians are experienced in it." The first chapter is opened by quoting Holt, "It is not so much that diseases in early life are peculiar as that the patients themselves are peculiar."

Systemic relationship should always be a frank consideration in urologic study and, vice versa, the ability to correlate referred pains with urologic involvement is forcibly stressed by the author just as is a gastrointestinal upset as an overshadowing symptom, "because of difficulty, investigative short cuts should not be tempting."

The author stresses the importance of a complete, thorough history taking and physical examination, the manner of which he describes in detail, putting emphasis on the manner in which urines should be collected and the necessity of other laboratory work including blood chemistry and radiography which should often include cystography with abstinence of general anesthesia in retrograde pyelography.

The many anomalies of the urinary tract and their sequelae, due to delayed diagnosis, are described, stress being placed upon the most common: namely, phimosis, stenosis of the preputial meatus and the external urethral meatus, congenital urethral stricture of the male and female, posterior urethral valvular formation and hypertrophy of the verumontanum in the male.

Urinary infections are given the same detailed consideration going into the incidence, etiology and the relative order of the frequency of focal infections. A complete urologic examination of every case that has a persistent pyuria after thirty days medication is mandatory. He states that the incidence of chronic renal tuberculosis in chronic pyuria is 1:60.

The first chapter of volume two, written by Dr. John D. Lyttle, deals solely with Bright's disease. The remainder of this volume deals with genital diseases, urogenital injuries, calculus disease, tumors, neuromuscular disease, and urosurgery in the same detailed manner as were the subjects in volume one. The great necessity for the conservation of blood in infant surgery is forcibly stressed.

The author is entitled to the highest commendation for the concise, descriptive presentation of the text and the complete bibliographies attached to each chapter covering the medical literature as

completely as his personal experiences, including 12,080 autopsies on infants and children.

MONROE WOLF, M. D.

Diseases of the Nervous System in Infancy, Childhood, and Adolescence: By Frank R. Ford, M. D. Springfield, C. C. Thomas, 1937. Pp. 953. Price \$8.50.

Dr. Ford's book should meet with favor from neurologist and pediatrician alike. He covers a difficult field exhaustively, yet with clarity. His illustrations are well chosen. The list of references adequately covers the needs of those for whom the book is intended. Due attention has been given to recent work in the various fields of heredity, embryology, neurophysiology and neuropathology. Case histories are given to emphasize the clinical picture in many instances and are definitely helpful.

L. A. GOLDEN, M. D.

The Physician's Business: By George D. Wolf, M. D. Philadelphia and New York, J. B. Lippincott, 1938. Pp. 384. Price \$5.00.

"The Physician's Business" is a volume of fourteen chapters written in a simple, straightforward manner. It deals with the physician's welfare from the internship phase to the current trends in medicine. Each aspect is thorough and up-to-date. Many of the pitfalls that face the young man who is starting the practice of medicine are enumerated and methods are suggested to avoid these snares. For the physician who has been in practice there is a wealth of hints and recommendations.

The problem of location and the planning and equipping of an office are discussed with extreme thoroughness. The subjects of fees, professional contracts, office personnel, technics, insurance and even income tax are recorded in an authentic fashion. Each topic is so well handled that to elaborate on any theme would be a recapitulation of the text.

Every physician is urged to read this volume. Its acquisition would be an asset.

M. LYON STADIEM, M. D.

Heart Failure: By Arthur M. Fishberg, M. D. Philadelphia, Lea & Febiger, 1937. Pp. 788. Price \$8.50.

Heart failure is of such paramount importance to the clinician that when a monograph devoted to its consideration appears it is with mingled feelings of happiness and fear that he undertakes to review its pages. There is a crying need for an author who is able to present a well balanced book, one that is adequate both from the viewpoint of the laboratory and the clinic. That Dr. Fishberg

has been eminently successful must be the conclusion that one reaches as he reads the book, and the fear of just one more publication is dissipated in the happiness of the "fait accompli" of a splendid and comprehensive study of heart failure.

The author, in the first portion of the book, deals with the broad concepts underlying failure of the circulation and the cardinal circulation syndromes. He then states the methods for measurement of the several fundamental circulatory variables in health and disease and notes their role in the development of circulatory failure. The extremely important subject of the diminution of the volume of actively circulating blood, resulting in decreased cardiac output with resultant failure, is done with clarity and precision, and the older theory of impairment of the motor organs of the circulation is shown to be incorrect.

The tremendous strides forward in the understanding of the dynamics of the circulation in health and disease is fully and ably treated. The separation of the two vital syndromes of cardiac and peripheral circulatory failure are more than sufficient justification for the book.

Heart and peripheral circulatory failure, resulting from various diseases of the heart, the lungs, and following in the wake of acute infectious diseases, is detailed and the all important differences in treatment that are essential to success in caring for the patient are rationally explained and elaborated.

A splendid set of references is appended to each chapter and a very good table of contents and index make it possible quickly to obtain any desired data.

I. L. ROBBINS, M. D.

Dr. Bodo Otto: By James E. Gibson. Baltimore, Charles C. Thomas, 1937. Pp. 345. Price \$4.00.

A delightful book of interest to the historically minded. This book would well repay the physician who, in his spare time and moments of leisure, prefers to read something other than current magazine literature and would like to know something about the medical profession in Revolutionary days. It would be a stimulus to any one, physician or laity, to read about the medical experiences of the Continental Army at Valley Forge which is brought in as part of the life of this very real physician, Dr. Bodo Otto.

J. H. MUSSER, M. D.

Manual of Clinical and Laboratory Technic: By H. B. Weiss, A. B., M. D., F. A. C. P., and Raphael Isaacs, A. M., M. D., F. A. C. P. Philadelphia, W. B. Saunders Co., 1937. Pp. 141. Price \$1.50.

This little manual gives ready access to the gross details of the most common laboratory tests. It

is of further value because of the addition of some of the newer tests which are not yet easily available.

JOSEPH ZISKIND, M. D.

Muir's Bacteriological Atlas: Rewritten by C. C. vanRooyen, M. D. Baltimore, William Wood, 1937. Pp. 90. Price \$5.25.

The object of this book is to provide illustrations of bacteria; this has been done faithfully by the author. The descriptive side has accordingly been shortened. It should be used by the student in conjunction with some standard textbook of bacteriology.

JOSEPH ZISKIND, M. D.

The Cerebrospinal Fluid: By H. Houston Merritt, M. D., and Frank Fremont-Smith, M. D. Philadelphia, W. B. Saunders, 1937. Pp. 333. Price \$5.00.

This work represents an honest effort to correlate recognized and well tried tests performed under standard and personally observed conditions. One can, therefore, match with considerable accuracy a case under observation with the findings so liberally given in this book. The carefully controlled work, from which the facts given in this book are drawn, makes it of great value to the clinician.

JOSEPH ZISKIND, M. D.

On Thought in Medicine: By Hermann von Helmholtz, Baltimore. Johns Hopkins Press, 1938. Pp. 27. Price \$0.75.

"On Thought in Medicine" is a translation by E. Atkinson of Hermann von Helmholtz's "Das Denken in der Medizin," an address delivered sixty years ago. There is a short introduction by Arno B. Luckhardt. The publication is another in the series of reproductions of classic medical literature put out by the Johns Hopkins Press. It is a thin volume, very neatly and attractively bound.

The author, Hermann von Helmholtz (1821-94), a man of universal genius, established an everlasting reputation in many departments of science and human thought. In this address, he discourses on the principles of the scientific method, picturing the conditions, hopes and endeavors of medicine as it had existed in the past, and comparing this state of things with that into which medicine was developing at the time of the address. One senses readily the vast resources which were at his command; but one feels, possibly, as if one were dealing with a person a little too strong and dignified. Especially does the address lack that personal touch and attitude which charms and is so dear to Southern blood. For this reason, this is a piece of literature that will be fully appreci-

ated, not by the ordinary run of physicians, but by the historian and student of medical classics.

ROBERT S. MUNGER, M. D.

Modern Dietary Treatment: By Margery Abrahams, M.Sc., and Elsie M. Widdowson, Ph.D. Baltimore, William Wood, 1937. Pp. 328. Price \$3.25.

This small volume on dietary treatment may be considered a handy addition to the dietitian's or nurse's library; to the practitioner and specialist in metabolic diseases, its value is questioned. The outstanding feature of the book is the simplicity in which the subject matter is covered.

The book is divided into three parts: The first deals with the principles of dietetics and foodstuffs; the second part embraces the different diseases in which dietary treatment is necessary, with the diets planned for the various conditions; the last section takes up individual diets in detail with a large number of recipes included.

The tables of diets are numerous and undoubtedly correct as far as constituent foodstuffs and calorific values are concerned. Practicability is lost because so many of the dishes listed are essentially of English origin and unsuited for American patients.

Another gross fault of the book is the recommendation of the amount of insulin that is necessary with the various diabetic diets. Obviously, no standard number of units of insulin for the individual diabetic can be specified without knowledge of the patient's tolerance. The diabetic diets listed here are probably those copied from charts of different hospitalized diabetics with the amount of insulin necessary for stabilization.

OSCAR BLITZ, M. D.

Medico-legal Aspects of the Ruxton Case: By John Glaister, M. D., D.Sc. and James C. Brash, M. A. M., M. D., F.R.C.S. Edin. Baltimore, William Wood, 1937. Pp. 284. Price \$6.00.

Almost everyone is familiar with the Ruxton murder case which occurred in Lancaster, England, and which was solved after the finding of scattered human remains on September 29, 1935.

The authors have covered most thoroughly a description of the dismembered parts, along with a detailed account of the tedious process of assorting the parts and their subsequent reconstruction and identification. The fact that the remains were parts of two bodies made the task even more difficult, but the thoroughness of study leaves no doubt in the reader's mind as to the accurateness of identification.

Photographs superimposed upon the reconstructed heads were used instead of the complete plastic reconstruction, as is sometimes used. Fingerprints, likewise, were utilized in the identifica-

tion by a comparison with those found on glassware in the Ruxton home. Flexible casts of the feet were found to fit perfectly into the shoes of the two women.

The identification of material found with the human remains as that of a Cyclops monster is of interest.

This volume, which is comparatively brief when compared with the enormous amount of material covered, should prove especially interesting to those dealing with medico-legal subjects of this nature and of special interest to the various law enforcement agencies which are called upon to deal with material of this character.

T. H. OLIPHANT, M. D.

Maternal Deaths—The Ways to Prevention: By Iago Galdston, M. D. New York, Commonwealth Fund, 1937. Pp. 115, Price \$0.75.

This book, though rather small, deserves a great deal of favorable comment, since it is clear, concise, and all-inclusive.

The author has gathered the facts collected by the New York Academy of Medicine in their investigation in 1933, which was primarily to inform the medical profession of ways and means to reduce or prevent maternal deaths. Dr. Galdston has published the essential points here, which are for the benefit of those not connected with the medical profession, since maternal mortality is due not only to medical, but also to social and economic factors.

Regardless of the method of computation, the maternal mortality in the U. S. is exceedingly high. In 1932, statistics revealed that in New York City, 65 per cent of the maternal deaths might have been avoided had proper care and treatment been carried out. He shows that, whereas lack of knowledge or judgment on the part of the physician might often be a cause, more important is the fact that all too often the patient herself is at fault.

Three major factors are involved in prevention:

1. The obstetrical attendant: Errors in judgment will continue as long as man is fallible and decisions have to be made. Errors in technic can be reduced by improving our obstetrical education.
2. The patient: More than one-third of all preventable deaths were due to some failure on the part of the patient to avail herself of those opportunities which safeguard the mother during the period of gestation and lying-in. These patients may be subdivided into (a) those, who, through ignorance or neglect, failed to seek proper care early; (b) those who failed to cooperate with their attendant by neglecting or refusing to follow instructions.

3. The community: This factor naturally must carry out its responsibility by programs of education so as to dispense with the preceding group. Prospective mothers must know the dangers of neglecting to seek adequate prenatal care early, and the importance of full cooperation with their attendant.

Prenatal care is briefly discussed, each important point being mentioned.

The attendant at delivery should be an adequately trained physician but, unfortunately, such is impossible for every case. Midwives attend approximately 10 to 12 per cent of the births in the United States. Their training varies considerably. It is regrettable that the midwife problem is obscured by the fact that numerically few maternal deaths are charged to her. Apparently the midwife plays an important part in our obstetrical problem, and they, as a group, cannot be dispensed with. This, then, resolves itself to better education of the midwife.

Hospital deliveries are safer than home deliveries, but the hospital should be one approved by the American College of Surgeons.

The death rate from operative deliveries is five times that of spontaneous deliveries. Cesarean section is "done too frequently with insufficient indication by the unfit."

A word of warning is sounded against the injudicious use of analgesics and anesthetics.

The question of abortion is discussed. Approximately 681,000 abortions occur each year in the United States and cause the death of 8000 to 10,000 young women.

The final chapter considers the all-important question: "What Can Be Done About It?"

An appendix is added which reveals the functions of the Cleveland Hospital Obstetric Society and their results.

This book should by all means reach the attention of every person concerned with maternal welfare.

HARRY MEYER, M. D.

Clinical Roentgen Therapy: Edited by Ernst A. Pohle, M. D., Ph. D., F. A. C. R., with Foreword by George W. Holmes, M. D. Philadelphia, Lea & Febiger, 1938. Pp. 819. Price \$10.00.

This volume is a companion work to "Theoretical Principles of Roentgen Therapy" by the same author. Since the latter book fully covers the theoretical principles "Clinical Roentgen Therapy" is the practical application of these principles. Seventeen specialists of international reputation have contributed to make this volume complete and practical.

While it is impossible to present adequate dis-

cussions of roentgen and radium therapy in a single volume, the separation of these types of radiation therapy is difficult. However, since the treatment of certain conditions requires the use of both radium and roentgen therapy, sufficient data regarding radium therapy have been included to complete the picture of the proper treatment.

The outline of this work consists of the discussion of the use of roentgen therapy in the diseases of the systems and specialties. The last chapter, devoted to roentgen ray reactions and injuries, and the discussion of the medico-legal aspects of injuries following the application of roentgen rays are valuable additions to the volume. The bibliography is fairly complete and the illustrations are excellent.

J. N. ANE, M. D.

Pulmonary Tuberculosis in Practice: By R. C. Wingfield. Baltimore, William Wood, 1937. Pp. 122. Price \$2.50.

"Pulmonary Tuberculosis in Practice" by R. C. Wingfield is a splendid and simple presentation of the natural history of pulmonary tuberculosis and its complications. The ancillary laboratory aids in diagnosis are concisely and clearly considered. The many roentgen ray plates with accompanying schematic representations of the roentgen ray pictures, plus the various charts, are excellent. The author has done an excellent job and anyone anxious to familiarize himself with the modern concepts of the diagnosis and treatment of this disease will do well to note the contents of this well written and excellently printed small book.

I. L. ROBBINS, M. D.

Fever Therapy, Abstracts and Discussions of Papers Presented at the First International Conference On Fever Therapy: Edited by Members of the American Committee, Dr. Walter M. Simpson, Chairman, and Dr. Wm. Bierman, Secretary. New York City, Paul B. Hoeber, Inc., 1937. Pp. 486. Price \$5.00.

The phenomenal growth in the use of fever therapy in the last decade has promoted such great interest in its use as a therapeutic agent that scientific research has become world-wide. First, a group of American pioneers conceived the idea of assembly for the purpose of disseminating knowledge and thereby improving the worth of hyperthermia in the treatment of disease and expediting its general use in those cases where demonstrations have vindicated its use as the needed specific. The first assembly was in New York in 1931.

The first International Conference on Fever Therapy was held in the same city in March, 1937. Doctors Simpson and Bierman have under-

taken the tremendous task of compiling the findings of this conference. Few generalizations have been made, for the scope of the material is of such great intensity that evaluations are often left to the reader's election. Because of the many nationalities represented at this conference, the book is a compilation in three languages, English, French and German. Sixteen physicians from as many countries were in attendance. Thirteen of these were official delegates appointed by the Ministers of Health.

The publication presents in one volume abstracts and discussions which are, in themselves, summaries, and therefore are only a portion of the papers presented at the conference. This compend has been enlarged to book size by repeating the same material in the languages mentioned. There are four hundred eighty-six pages, three hundred of which are repetitions. We believe the purpose of the conference would have been more adequately served had the authors published three books of great length, each in a different language.

The main topic has the following sub-divisions: first, physiology and pathology; second, fever therapy in miscellaneous diseases; third, fever therapy in syphilis; and fourth, fever therapy in gonococcic infections. These comprise, in all, fifty-five papers.

Many of the treatises convey valuable information, especially to the novice. Those familiar with fever therapy were already well-versed in its literature and had previously utilized much of the information gained by its survey. But, to others, some of the statements made at this conference would inevitably result in confused opinions which would be harmful to the patient should he be the victim of such misinformation.

Those physicians whose privilege and pleasure it was to attend the first meeting of the International Conference of Fever Therapy doubtless found it a memorable occasion. To be one of an assembly of noted physicians whose untiring efforts have contributed to a great cause can not be other than inspirational. To other physicians in attendance, there must have been some compensation. To them, a book compiling the proceedings of such a conference, is a souvenir of memories.

To the student or practitioner, however, the book is valueless as a reference work. No criterion attests its documentary worth. A more complete orientation is necessary if one is to have a satisfactory knowledge of the subject.

Therapeutic measures of the future will include hyperthermic agents yet unknown.

Our criticism of "Fever Therapy" is not entirely an adverse one. The purpose of the book's publication may have been accomplished. We trust that it may further the work of scientific research.

We honor the authors for their own outstanding contributions to a form of therapy whose depths have not yet been sounded or its heights reached.

UPTON GILES, M. D.

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